

Repair Manual

Jetta 2011 ➤

Jetta 2013 ➤

Brake System

Edition 05.2016





List of Workshop Manual Repair Groups

Repair Group

- 00 - General, Technical Data
- 45 - Antilock Brake System
- 46 - Mechanical Components
- 47 - Hydraulic Components

Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – General, Technical Data

1 Identification

(Edition 05.2016)

K0059071121 - 04.17.2023

⇒ [N1.1.1 Number Allocation - Brakes", page 1](#)

1.1 PR Number Allocation - Brakes

⇒ [N1.1.1 Number", page 1](#)

⇒ [B1.1.3 Brakes", page 2](#)

⇒ [B1.1.4 Brakes, Twist Beam Rear Suspension", page 2](#)

⇒ [B1.1.5 Brakes, Multi-Link Rear Axle", page 3](#)

1.1.1 PR Number

The PR number on the vehicle data label describes which brake system is installed in the vehicle among other things.

Vehicle Data Label

V.I.N.	3VWAK7AJ3BM000036																																											
N.I.V.																																												
Type	JETTA 2,0 TREND 85																																											
Eng. code/Trans. code	CBP MAM																																											
Code moteur/boite vit.																																												
Paint No./Anterior	LR7L JM 0000																																											
N° peint/Int.																																												
Options	<table border="0"> <tr> <td>1ZQ</td><td>V0A</td><td>0A2</td><td>0N9</td><td>1AS</td><td>1C2</td><td>1G4</td><td>1MG</td><td>2J6</td><td>5RR</td> </tr> <tr> <td>1K6</td><td>5SH</td><td>7KK</td><td>4X3</td><td>7GB</td><td>3L3</td><td>3Q6</td><td>QG0</td><td>3YQ</td><td>4R0</td><td>8ES</td> </tr> <tr> <td></td><td>G47</td><td>8AP</td><td>B0D</td><td>1K1</td><td>3FA</td><td>4K0</td><td>4B4</td><td>8YD</td><td>816</td><td>9AB</td> </tr> </table>												1ZQ	V0A	0A2	0N9	1AS	1C2	1G4	1MG	2J6	5RR	1K6	5SH	7KK	4X3	7GB	3L3	3Q6	QG0	3YQ	4R0	8ES		G47	8AP	B0D	1K1	3FA	4K0	4B4	8YD	816	9AB
1ZQ	V0A	0A2	0N9	1AS	1C2	1G4	1MG	2J6	5RR																																			
1K6	5SH	7KK	4X3	7GB	3L3	3Q6	QG0	3YQ	4R0	8ES																																		
	G47	8AP	B0D	1K1	3FA	4K0	4B4	8YD	816	9AB																																		

M00-10057

Front wheel brakes 1ZQ are installed in this vehicles -arrow-.



Note

The PR number for the rear wheel brakes is not on the vehicle data plate. For information regarding each rear wheel brake installed, refer to ELSA/Vehicle Individual.

There is a vehicle data label in the spare wheel well and the maintenance schedule.

- ◆ Allocation. Refer to the Parts Catalog.
- ◆ The following tables show the PR number code key. This is important in order to know the brake caliper/brake rotor and brake pad combination.



1.1.2 Front Brakes (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET

Engine	PR Number	Front Brakes
1.2L 77 kW	1ZM/1ZQ	FS III (15)
1.6L 77 kW		
1.6L 77 kW Turbo Diesel Injection		
2.0L 85 kW		
2.0L 81 kW Turbo Diesel Injection		
1.4L 90 kW	1ZP/1ZE	FN 3 (15)
1.4L 110 kW hybrid		
1.6L 77 kW Turbo Diesel Injection		
2.0 103 kW Turbo Diesel Injection		
2.5L 125 kW		
1.4L 118 kW/110 kW	1ZA/1ZB/1LV	FN 3 (16)
2.0L 147 kW		
2.0L 155 kW		

1.1.3 Front Brakes

Engine	PR Number	Front Brakes
2.0L 85 kW	1ZM/1ZQ	FS III (15)
1.4L 110 kW	1ZP/1ZE	FN 3 (15)
1.4L 110 kW hybrid		
1.8L 125 kW		
2.5L 125 kW		
2.0L 103 kW turbo diesel injection		
2.0L 147 kW	1ZA/1ZB/1LV	FN 3 (16)

1.1.4 Rear Brakes, Twist Beam Rear Suspension

Engine	PR Number	Rear Brakes
2.5L 125 kW	1KS/1KT	Bosch ZOH BIR III
2.5L 125 kW	1KD/1KU ²⁾	TRW CI-38 (15)
2.5L 125 kW ¹⁾	1KG	TB 230 X 32
2.0L 85 kW	1KG	TB 230 X 32

¹⁾ This specification is valid for SE-Version vehicles only.



² applies from 12/10/2012.

1.1.5 Rear Brakes, Multi-Link Rear Axle

Engine	PR Number	Rear Brakes
1.2L 77 kW	1KS/1KT	Bosch ZOH BIR III
1.4L 90 kW		
1.4L 110 kW hybrid		
1.4L 118 kW/110 kW		
1.6L 77 kW		
1.6L 77 kW Turbo Diesel Injection		
2.0L 81 kW Turbo Diesel Injection		
2.0L 85 kW		
2.0L 103 kW turbo diesel injection		
2.0L 147 kW		
2.0L 155 kW		
2.5L 125 kW		
1.2L 77 kW	1KD/1KU ²⁾	TRW CI-38 (15)
1.4L 90 kW		
1.4L 110 kW hybrid		
1.4L 118 kW/110 kW		
1.6L 77 kW Turbo Diesel Injection		
2.0L 81 kW Turbo Diesel Injection		
2.0L 85 kW		
2.0L 103 kW turbo diesel injection		
2.0L 147 kW		
2.0L 155 kW		
2.5L 125 kW		

² applies from 12/10/2012.



2 Technical Data

⇒ [D2.1 ata, Brakes", page 4](#)

2.1 Technical Data, Brakes

⇒ [M2.1.1 aster Cylinder and Brake Booster", page 4](#)

⇒ [B2.1.2 rakes", page 4](#)

⇒ [B2.1.3 rakes", page 5](#)

2.1.1 Brake Master Cylinder and Brake Booster

Brake Master Cylinder ¹	Diameter in mm	22.2
Brake Master Cylinder ¹	Diameter in mm	23.81
Brake Booster	Diameter in inches	10

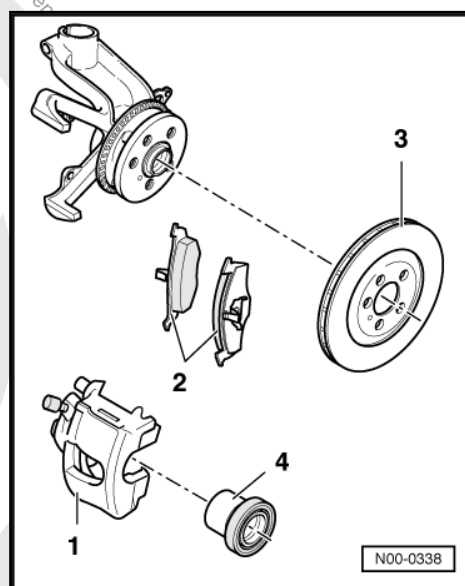
¹⁾ For allocation. Refer to the Parts Catalog.

2.1.2 Front Brakes

⇒ [Fig. "FS III Front Brakes", page 4](#)

⇒ [Fig. "Front Brakes, FN 3", page 5](#)

FS III Front Brakes

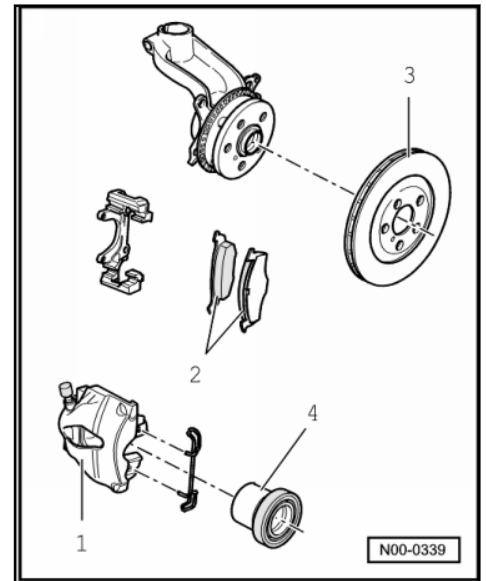


Item	PR Number		1ZM/1ZQ
1	Brake Caliper		FS III (15)
2	Brake Pad, Thickness	mm	14
	Brake Pad, Wear Limit without Backing Plate	mm	2
3	Brake Rotor	diameter in mm	280



Item	PR Number		1ZM/1ZQ
	Brake Rotor, Thickness	mm	22
	Brake Rotor, Wear Limit	mm	19
4	Brake Caliper, Piston	diameter in mm	54

Front Brakes, FN 3



Item	PR Number		1LV/1ZA/1ZB	1ZE/1ZP
1	Brake Caliper		FN3 (16)	FN3 (15)
2	Brake Pad, Thickness	mm	14	14
	Brake Pad, Wear Limit without Backing Plate	mm	2	2
3	Brake Rotor	diameter in mm	312	288
	Brake Rotor, Thickness	mm	25	25
	Brake Rotor, Wear Limit	mm	22	22
4	Brake Caliper, Piston	diameter in mm	54	54

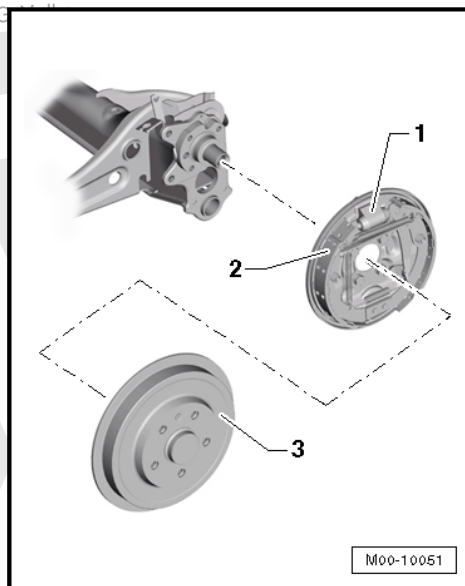
2.1.3 Rear Brakes

⇒ Fig. "Rear Brakes, Drum Brake", page 5

⇒ Fig. "Rear Brakes, Bosch", page 6

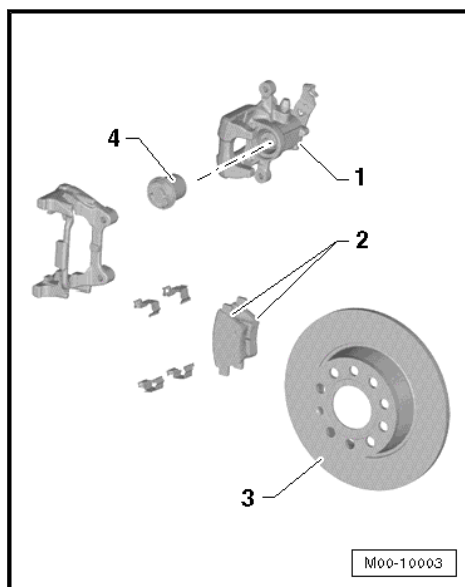
⇒ Fig. "CI 38 Rear Brakes", page 7

Rear Brakes, Drum Brake



Item	PR Number		1KG
1	Wheel Brake Cylinder	mm	20
2	Brake Pad, Width	mm	32
	Brake Pad, Thickness	mm	5
	Brake Pad, Minimum Thickness	mm	2.5
3	Brake Drum	diameter in mm	230
	Brake Drum, Wear Limit	diameter in mm	231.5

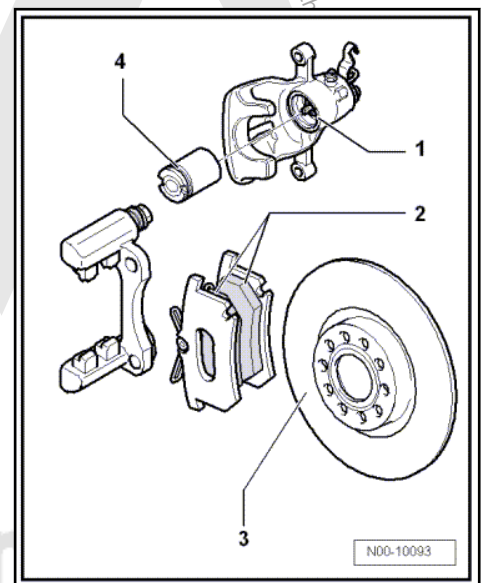
Rear Brakes, Bosch





Item	PR Number		1KS/1KT
1	Brake Caliper		Bosch
2	Brake Pad, Thickness without Backing Plate	mm	12
3	Brake Rotor	diameter in mm	272
	Brake Rotor, Thickness	mm	10
4	Brake Caliper, Piston	diameter in mm	38

CI 38 Rear Brakes



Item	PR Number		1KD
1	Brake Caliper		CI 38 (15")
2	Brake Pad, Thickness	mm	11
	Brake Pad, Wear Limit without Backing Plate	mm	2
3	Brake Rotor	diameter in mm	255
	Brake Rotor, Thickness	mm	10
	Brake Rotor, Wear Limit	mm	8
4	Brake Caliper, Piston	diameter in mm	38



3 Brake Inspection

⇒ [I3.1 nformation", page 8](#)

⇒ [V3.2 ehicles, Checking", page 8](#)

3.1 General Information

- ◆ The operation takes place on a test stand.
- ◆ During testing, manual transmission vehicles must be in neutral and automatic transmission vehicles must be in "N" driving mode.
- ◆ Follow the instructions provided by the test stand manufacturer while testing.



Note

The brake control systems do not function when the ignition is "off".

3.2 FWD Vehicles, Checking

The brake inspection is to be performed on a one-axle roller test stand.

Do not exceed a test speed of 6 km/h.

Use the values that are approved by Volkswagen.

These values fulfill the conditions.



45 – Antilock Brake System

1 General Information

⇒ [B1.1 raking System \(ABS\) Repair Information", page 9](#)

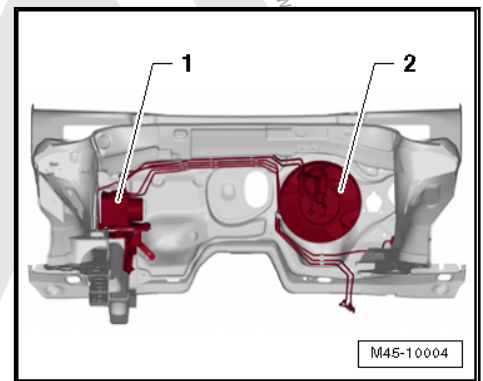
⇒ [D1.2 iagnostic Tester", page 10](#)

1.1 Anti-Lock Braking System (ABS) Repair Information

The ABS brake system is divided diagonally. The brake booster operates pneumatically via the vacuum brake booster.

Vehicles with ABS Mark 60 or ABS Mark 70 do not have a mechanical brake pressure regulator. A specially coordinated software program inside the ABS Control Module -J104- determines the brake pressure allocation for the rear axle.

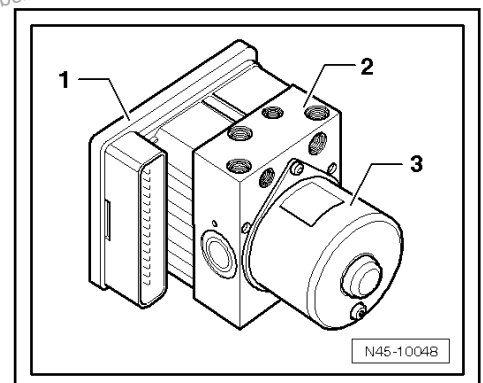
ABS Malfunctions Do Not Affect the Brake System and the Brake Booster. Conventional Brake System Stays Operative Even without ABS. A Change in Braking Behavior Should Be Checked. When the ABS Warning Lamp -K47- Is Turned on, the Rear Wheels May Lock Prematurely When Braking.



1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

2 - Brake Booster with Tandem Brake Master Cylinder

The ABS Control Module -J104- 1- and ABS Hydraulic Unit -N55- 2- are a single unit. Separation is only possible when removed. The pump -3- must not be separated from the ABS Hydraulic Unit -N55-.



Separation is not possible on vehicles with hydraulic brake booster or hill start assist.

- ◆ First determine the cause of the damage and then get the coding from the ABS Control Module -J104- using the Vehi-



Use a Vehicle Diagnostic Tester before performing any service work on the ABS.

- ◆ Disconnect the battery ground cable when the ignition is switched off.
- ◆ Before welding with an electric welding tool, observe the information found here → General Information; Body Repairs, Body Collision Repair.
- ◆ When handling brake fluid, observe the relevant safety precautions and notes. Refer to **⇒ "S6 system", page 457**.
- ◆ After finishing any work that required opening the brake system, bleed the brake system using the Brake Charger/Bleeder Unit -VAS5234-.
- ◆ During the final road test, make sure a controlled braking maneuver is performed at least one time (pulsing must be felt in brake pedal).
- ◆ It is necessary to maintain a high level of cleanliness when working on the ABS system.
- ◆ Do not use any products containing mineral oil, such as oils, greases, etc.
- ◆ Thoroughly clean all connection points and their surrounding areas before loosening. However, do not use aggressive cleaning agents such as brake cleaner, gasoline, thinners or similar compounds.
- ◆ Place the removed parts on a clean surface and cover them.
- ◆ Use the valve body transportation protection after disconnecting the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.
- ◆ Carefully cover over opened components or seal, if repairs are not performed immediately (use Sealing Plugs -1H0 698 311 A-).
- ◆ Only use lint-free cloths.
- ◆ Remove the replacement parts from their packaging just prior to installing them.
- ◆ Only use parts in their original packaging.
- ◆ Do not work with compressed air and do not move the vehicle when the system is open.
- ◆ The ABS Control Module -J104- may be briefly exposed to a maximum temperature of 95 °C (203 °F) when painting.
- ◆ The ABS Control Module -J104- can be exposed to a maximum temperature of 85 °C (185 °F) only briefly.
- ◆ Make sure that brake fluid cannot get into the connectors.

1.2 Vehicle Diagnostic Tester

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

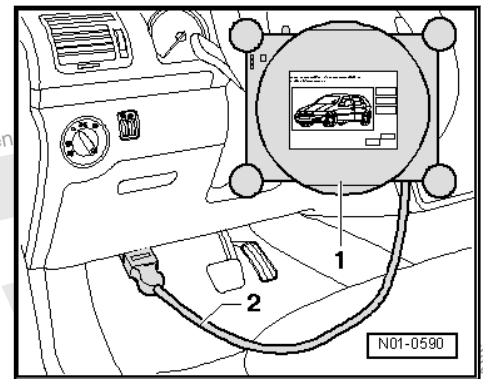


WARNING

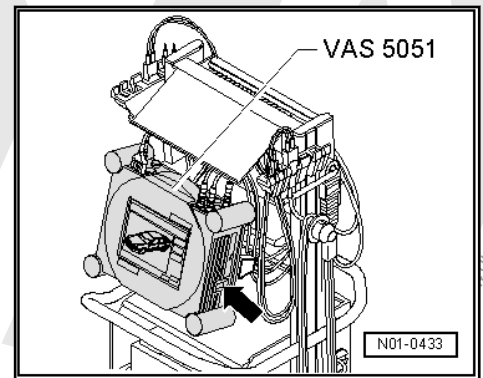
- ◆ *During a test drive, the testing and measuring equipment must always be secured on the back seat.*
- ◆ *These devices may be operated only by a passenger during a test drive.*



Connect the Vehicle Diagnostic Tester -1- as follows:



- Connect the connector from the Diagnostic Cable -2- to the diagnostic connection.
- Switch on the Vehicle Diagnostic Tester -arrow-.



The system is ready when the button fields for the different operating modes appear.

- Switch the ignition on.
- Touch **Guided Fault Finding** on the screen.
- Enter the data in Vehicle Diagnostic Tester.
 - ◆ **Chassis**
 - ◆ **Brake System**
 - ◆ **Anti-Lock Braking System**
 - ◆ **Functions**



2 Component Location Overview

⇒ [L2.1 ocation Overview - ABS", page 12](#)

⇒ [L2.2 ocation Overview - ABS/ESP", page 16](#)

2.1 Component Location Overview - ABS

⇒ [M2.1.1 ark 70 \(ABS/ASR\)", page 12](#)

2.1.1 ABS Mark 70 (ABS/ASR)



1 - ABS Control Module - J104-

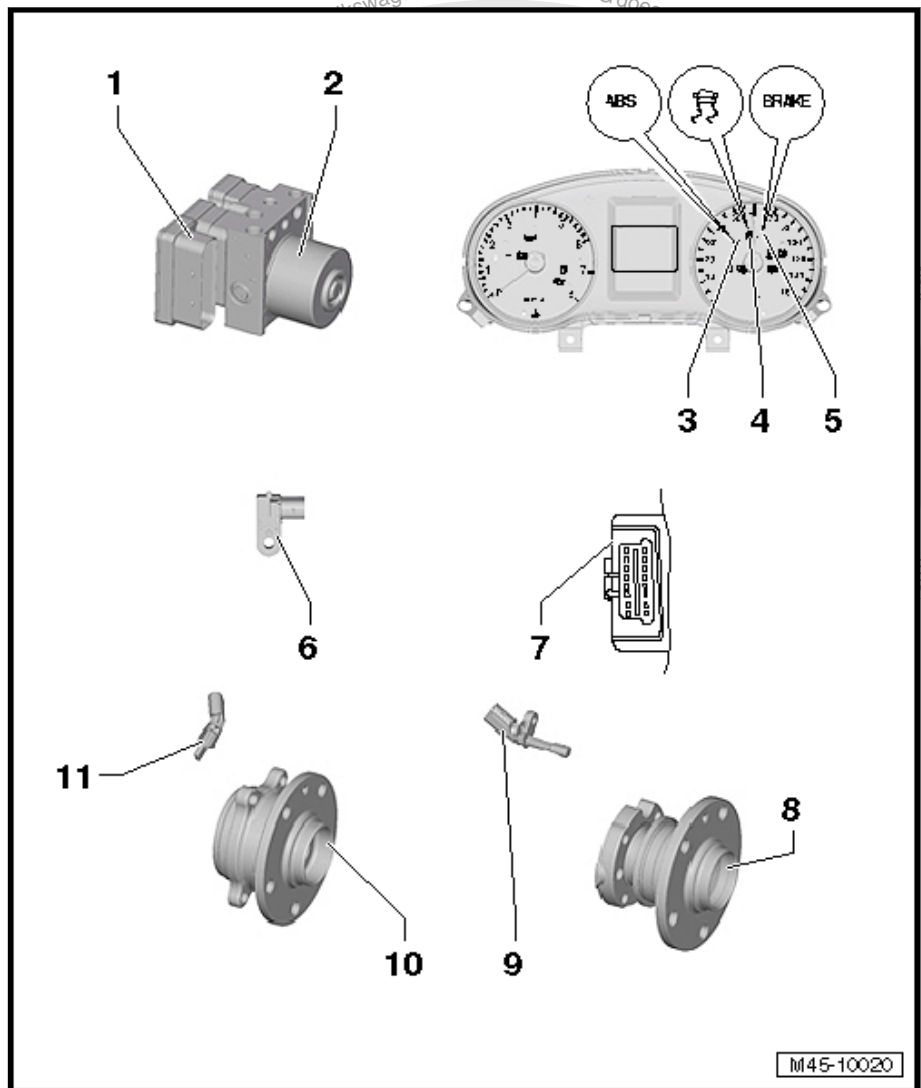
- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side.
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector
- ❑ Removing and installing. Refer to ➤ [M4 odule and Hydraulic Unit", page 39](#) .

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

ABS Hydraulic Unit -N55- consists of the following components:

- ❑ ABS Hydraulic Pump - V64-
- ❑ Valve block (contains intake and exhaust valves)
- ❑ ABS Hydraulic Pump - V64- and valve block must not be separated from one another.
- ❑ Removing and installing. Refer to ➤ [M4 odule and Hydraulic Unit", page 39](#) .



3 - ABS Indicator Lamp -K47-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [D3 isplay via Indicator Lamps", page 25](#) .

4 - Traction Control Indicator Lamp -K86-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [D3 isplay via Indicator Lamps", page 25](#) .

5 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [D3 isplay via Indicator Lamps", page 25](#) .

6 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-
- ❑ Component location: on the brake master cylinder
- ❑ Removing and installing. Refer to ➤ [L3.2 amp Switch, Removing and Installing", page 308](#) .

7 - Data Link Connector

- ❑ Component location: driver side footwell cover

8 - Rear Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing



9 - Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

- ☐ Removing and installing. Refer to ➤ [5](#), [page 136](#) .

10 - Front Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

11 - Right Front ABS Wheel Speed Sensor -G45-/ Left Front ABS Wheel Speed Sensor -G47-

- ☐ Removing and installing. Refer to ➤ [5](#), [page 136](#) .

2.1.2 ABS Mark 70 (ABS/ASR), RHD (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET



1 - ABS Control Module - J104-

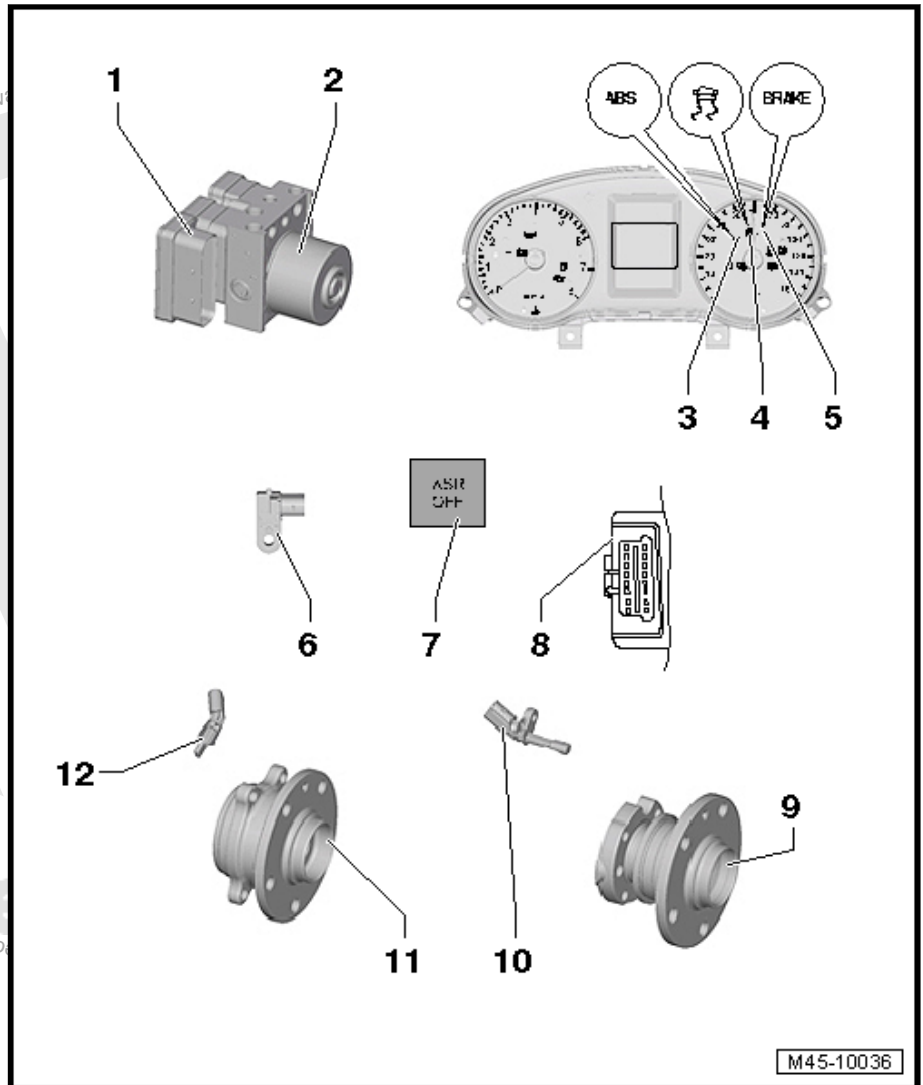
- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector
- ❑ Removing and installing. Refer to ➤ [M4 module and Hydraulic Unit", page 39](#).

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

The ABS Hydraulic Unit -N55- consists of the following components:

- ❑ ABS Hydraulic Pump -V64-
- ❑ Valve block (contains intake and exhaust valves)
- ❑ The ABS Hydraulic Pump -V64- and valve block must not be separated from one another.
- ❑ Removing and installing. Refer to ➤ [M4 module and Hydraulic Unit", page 39](#).



3 - ABS Indicator Lamp -K47-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [R3.2 HD \(Not for North America Market\)", page 27](#).

4 - Traction Control Indicator Lamp -K86-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [R3.2 HD \(Not for North America Market\)", page 27](#).

5 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [R3.2 HD \(Not for North America Market\)", page 27](#).

6 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-
- ❑ Component location: on the brake master cylinder
- ❑ Removing and installing. Refer to ➤ [L3.2 amp Switch, Removing and Installing", page 308](#).

7 - ASR/ESP Button -E256-

8 - Diagnostic Connection

- ❑ Component location: driver side footwell cover

9 - Rear Wheel Bearing Unit



- ☐ The ABS sensor ring is installed in the wheel bearing

10 - Rear Speed Sensor

- ☐ Removing and installing. Refer to [⇒ 5, page 136](#).

11 - Front Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

12 - Front Speed Sensor

- ☐ Removing and installing. Refer to [⇒ 5, page 136](#).

2.2 Component Location Overview - ABS/ESP

[⇒ M2.2.1 ark 60 EC", page 16](#)

[⇒ M2.2.2 ark 60 EC, from 9/2010", page 18](#)

[⇒ M2.2.3 ark 60 EC, Vehicles with Electro-Mechanical Power Steering", page 20](#)

2.2.1 ABS Mark 60 EC



1 - ABS Control Module - J104-

- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side.
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector.

The following components are integrated inside the ABS Control Module -J104-:

- ◆ Transverse Acceleration Sensor -G200-
- ◆ Rotation Rate Sensor - G202-
- ◆ Longitudinal Acceleration Sensor -G251- (depending on vehicle equipment)
- ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

The ABS Hydraulic Unit -N55- consists of the following components:

- ◆ ABS Hydraulic Pump -V64-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ Valve block (contains intake and exhaust valves)
 - ❑ The ABS Hydraulic Pump -V64- and valve block must not be separated from one another.
 - ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

3 - ABS Indicator Lamp -K47-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.3](#) , page 30 .

4 - ASR/ESP Indicator Lamp -K155-

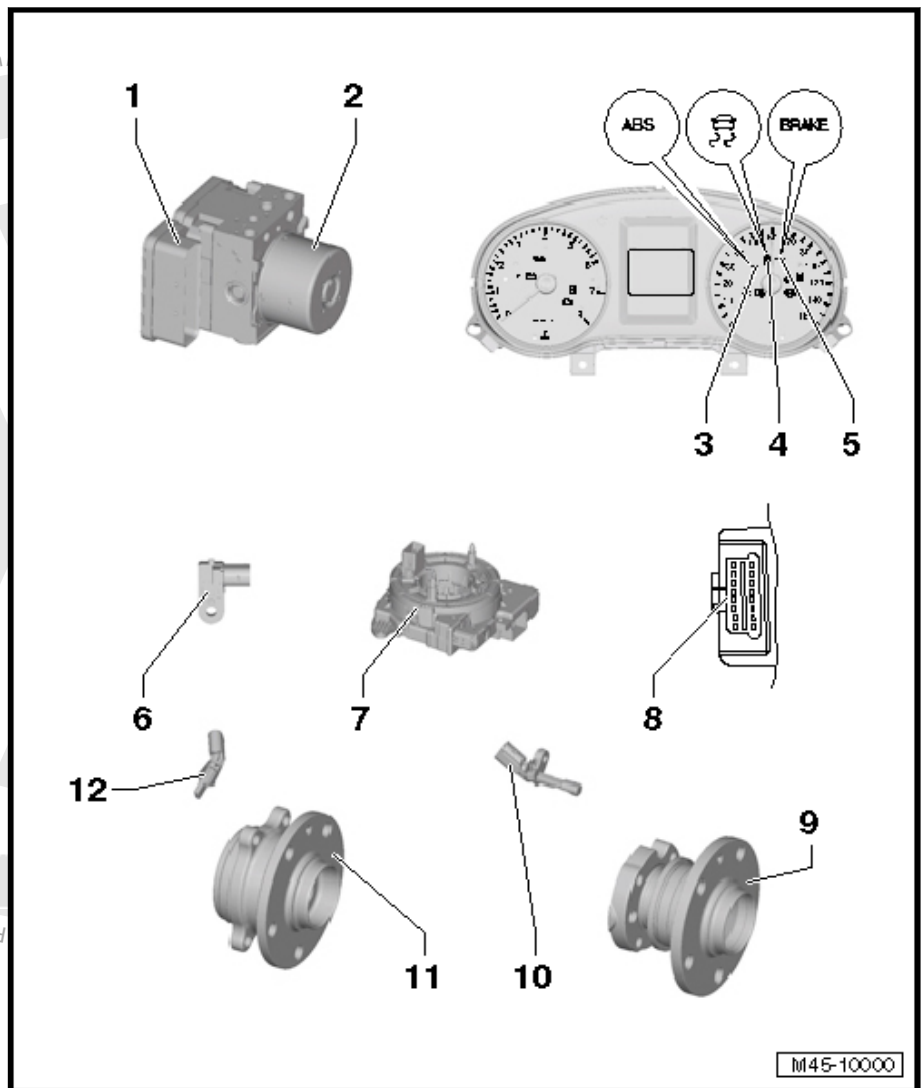
- ❑ Only on vehicles with ABS/EDL/ASR/ESP
- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.3](#) , page 30 .

5 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.3](#) , page 30 .

6 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-





- ☐ Component location: on the brake master cylinder
- ☐ Removing and installing. Refer to [⇒ L3.2 amp Switch, Removing and Installing", page 308](#) .

7 - Steering Angle Sensor -G85-

- ☐ Removing and installing. Refer to [⇒ S6.2 teering Angle Sensor G85, Removing and Installing at Steering Column", page 146](#) .

8 - Diagnostic Connection

- ☐ Component location: driver side footwell cover

9 - Rear Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

10 - Rear Speed Sensor

- ☐ Removing and installing. Refer to [⇒ 5 , page 136](#) .

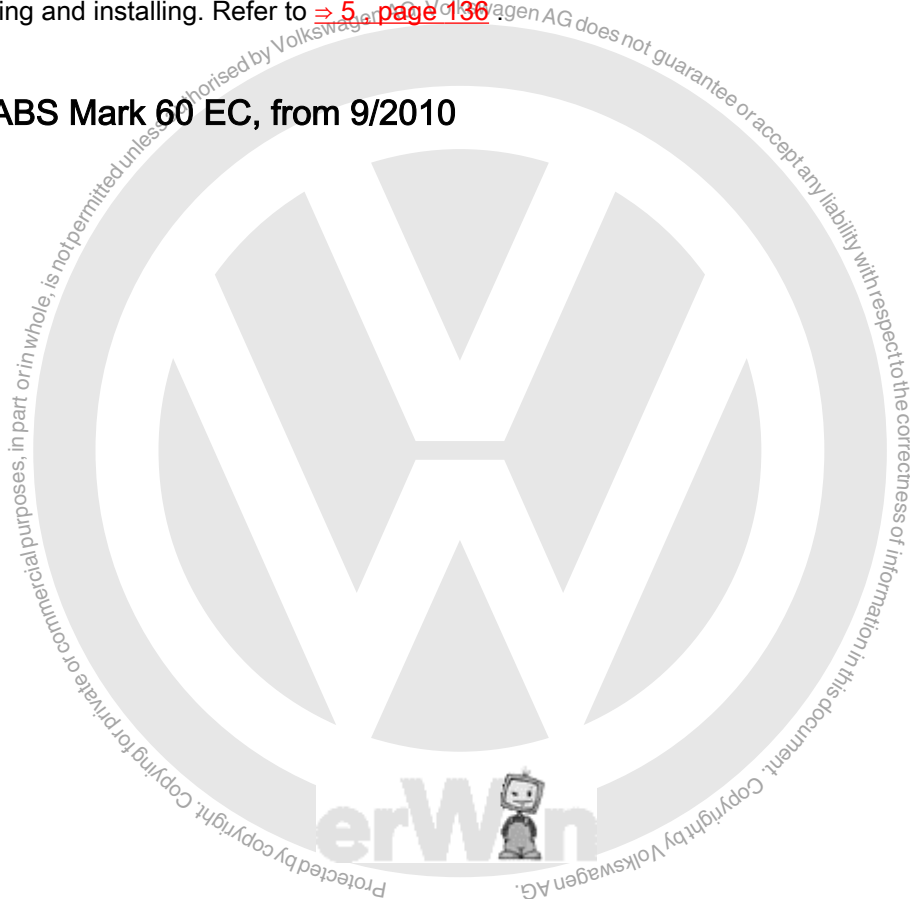
11 - Front Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

12 - Front Speed Sensor

- ☐ Removing and installing. Refer to [⇒ 5 , page 136](#) .

2.2.2 ABS Mark 60 EC, from 9/2010





1 - ABS Control Module - J104-

- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side.
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector.

The following components are integrated inside the ABS Control Module -J104-:

- ◆ Transverse Acceleration Sensor -G200-
- ◆ Rotation Rate Sensor - G202-
- ◆ Longitudinal Acceleration Sensor -G251- (depending on vehicle equipment)
- ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

The ABS Hydraulic Unit -N55- consists of the following components:

- ◆ ABS Hydraulic Pump -V64-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ Valve block (contains intake and exhaust valves)
 - ❑ The ABS Hydraulic Pump -V64- and valve block must not be separated from one another.
 - ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

3 - ESC Off Indicator Lamp

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [U3.4 SA and Canada, from 09/2010](#), page 32 .

4 - ABS Indicator Lamp -K47-

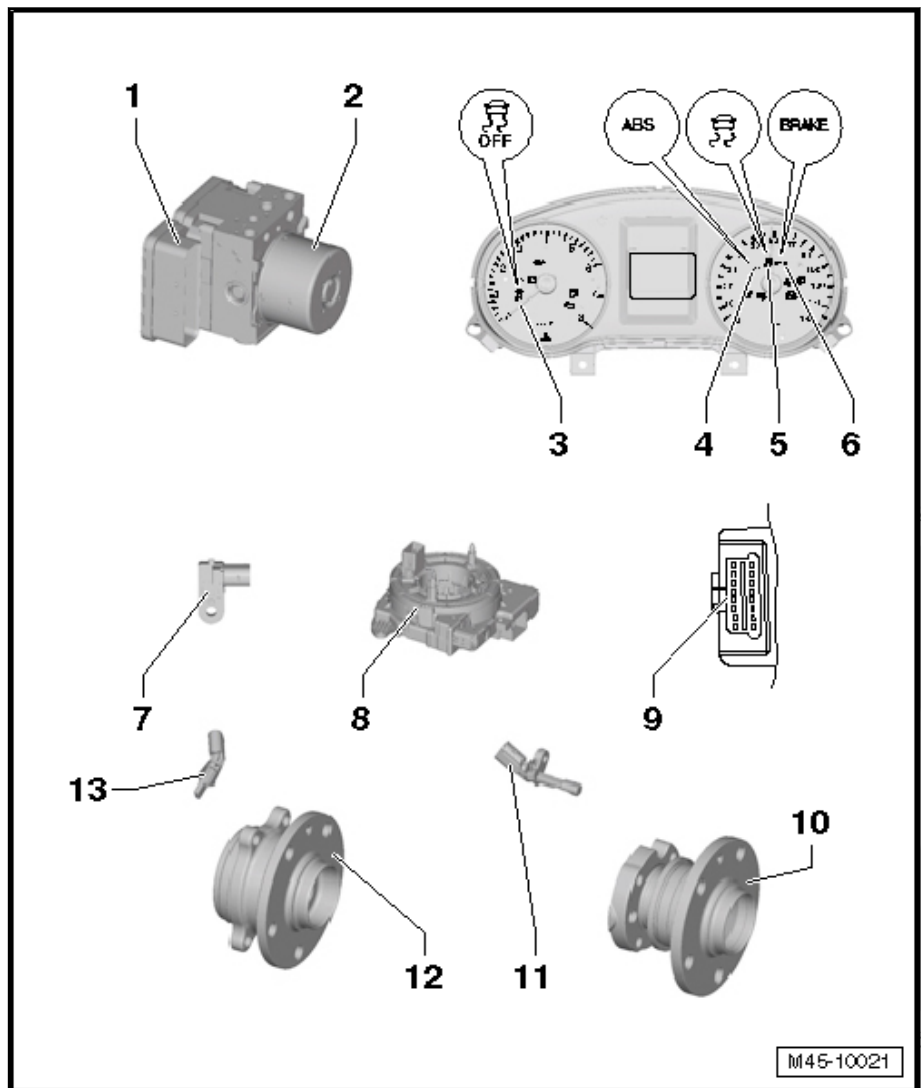
- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [U3.4 SA and Canada, from 09/2010](#), page 32 .

5 - ESC Indicator Lamp

- ❑ Only on vehicles with ABS/EDL/ASR/ESP
- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [U3.4 SA and Canada, from 09/2010](#), page 32 .

6 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster



M45-10021



- ❑ Function. Refer to [⇒ U3.4 SA and Canada, from 09/2010", page 32](#) .

7 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-
- ❑ Component location: on the brake master cylinder
- ❑ Removing and installing. Refer to [⇒ L3.2 amp Switch, Removing and Installing", page 308](#) .

8 - Steering Angle Sensor -G85-

- ❑ Removing and installing. Refer to [⇒ S6.2 teering Angle Sensor G85, Removing and Installing at Steering Column", page 146](#) .

9 - Diagnostic Connection

- ❑ Component location: driver side footwell cover

10 - Rear Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

11 - Rear Speed Sensor

- ❑ Removing and installing. Refer to [⇒ 5 , page 136](#) .

12 - Front Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

13 - Front Speed Sensor

- ❑ Removing and installing. Refer to [⇒ 5 , page 136](#) .

2.2.3 ABS Mark 60 EC, Vehicles with Electro-Mechanical Power Steering

1 - ABS Control Module - J104-

- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side.
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector.

The following components are integrated inside the ABS Control Module -J104-:

- ◆ Transverse Acceleration Sensor -G200-
- ◆ Rotation Rate Sensor -G202-
- ◆ Longitudinal Acceleration Sensor -G251- (depending on vehicle equipment)
- ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

The ABS Hydraulic Unit -N55- consists of the following components:

- ◆ ABS Hydraulic Pump -V64-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ Valve block (contains intake and exhaust valves)
 - ❑ The ABS Hydraulic Pump -V64- and valve block must not be separated from one another.
 - ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

3 - ESC Off Indicator Lamp

- ❑ Component location: in the instrument cluster

4 - ABS Indicator Lamp -K47-

- ❑ Component location: in the instrument cluster

5 - ESC Indicator Lamp

- ❑ Component location: in the instrument cluster

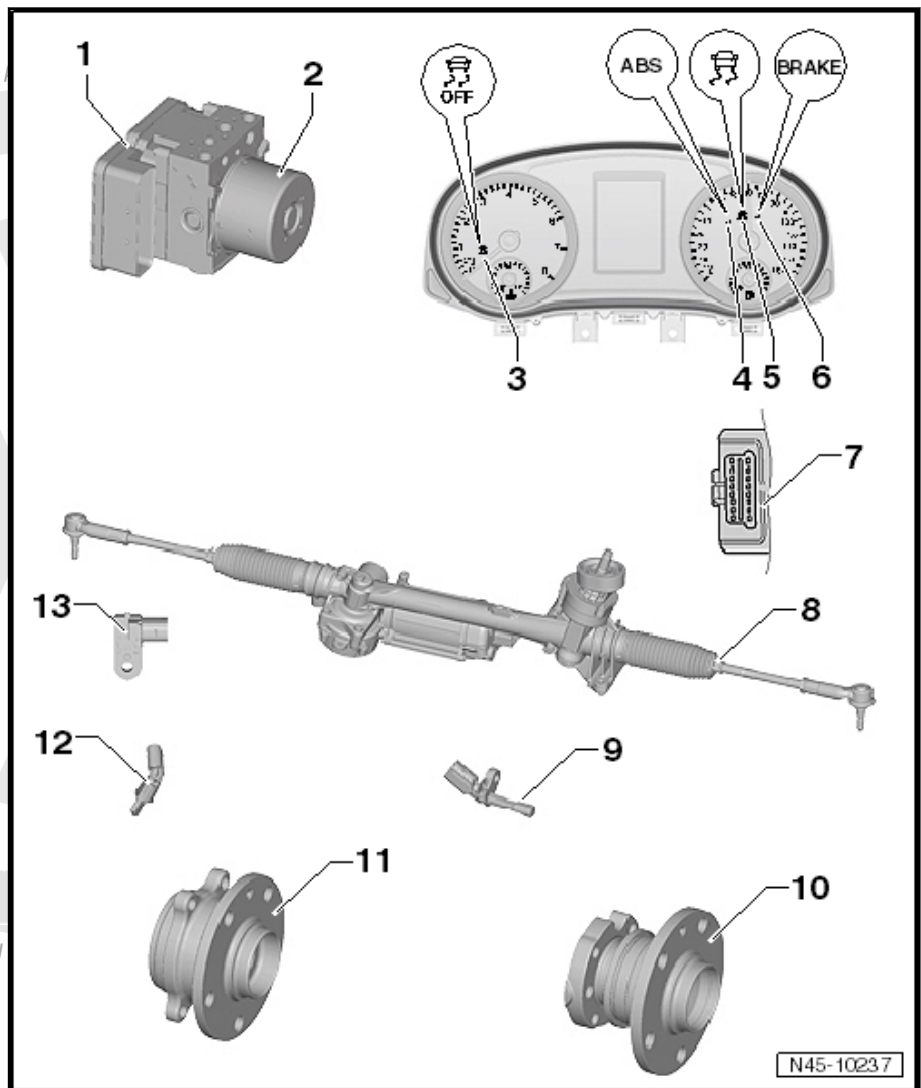
6 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster

7 - Diagnostic Connection

- ❑ Component location: driver side footwell cover

8 - Steering Angle Sensor -G85-





- ❑ Removing and installing. Refer to ➤ [S6 ystem Components, Removing and Installing", page 145](#) .

9 - Rear Speed Sensor

- ❑ Removing and installing. Refer to ➤ [5 , page 136](#) .

10 - Rear Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

11 - Front Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

12 - Front Speed Sensor

- ❑ Removing and installing. Refer to ➤ [5 , page 136](#) .

13 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-
- ❑ Component location: on the brake master cylinder
- ❑ Removing and installing. Refer to ➤ [L3.2 amp Switch, Removing and Installing", page 308](#) .

2.2.4 ABS Mark 60 EC, Vehicles with Electro-Mechanical Power Steering (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET



1 - ABS Control Module - J104-

- ❑ Component location: on the ABS Hydraulic Unit -N55- inside the engine compartment on the right side.
- ❑ Do not disconnect the connector before successfully completing OBD. Switch off the ignition before disconnecting the connector.

The following components are integrated inside the ABS Control Module -J104-:

- ◆ Transverse Acceleration Sensor -G200-
- ◆ Rotation Rate Sensor -G202-
- ◆ Longitudinal Acceleration Sensor -G251- (depending on vehicle equipment)
- ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

2 - ABS Hydraulic Unit -N55-

- ❑ Component location: in the engine compartment on the right side

The ABS Hydraulic Unit -N55- consists of the following components:

- ◆ ABS Hydraulic Pump -V64-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ Valve block (contains intake and exhaust valves)
 - ❑ The ABS Hydraulic Pump -V64- and valve block must not be separated from one another.
 - ❑ Removing and installing. Refer to ➤ [A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing](#), page 47 .

3 - ASR/ESP Indicator Lamp 2 -K216-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.5 , page 35](#) .

4 - Brake Pad Wear Indicator Lamp -K32-

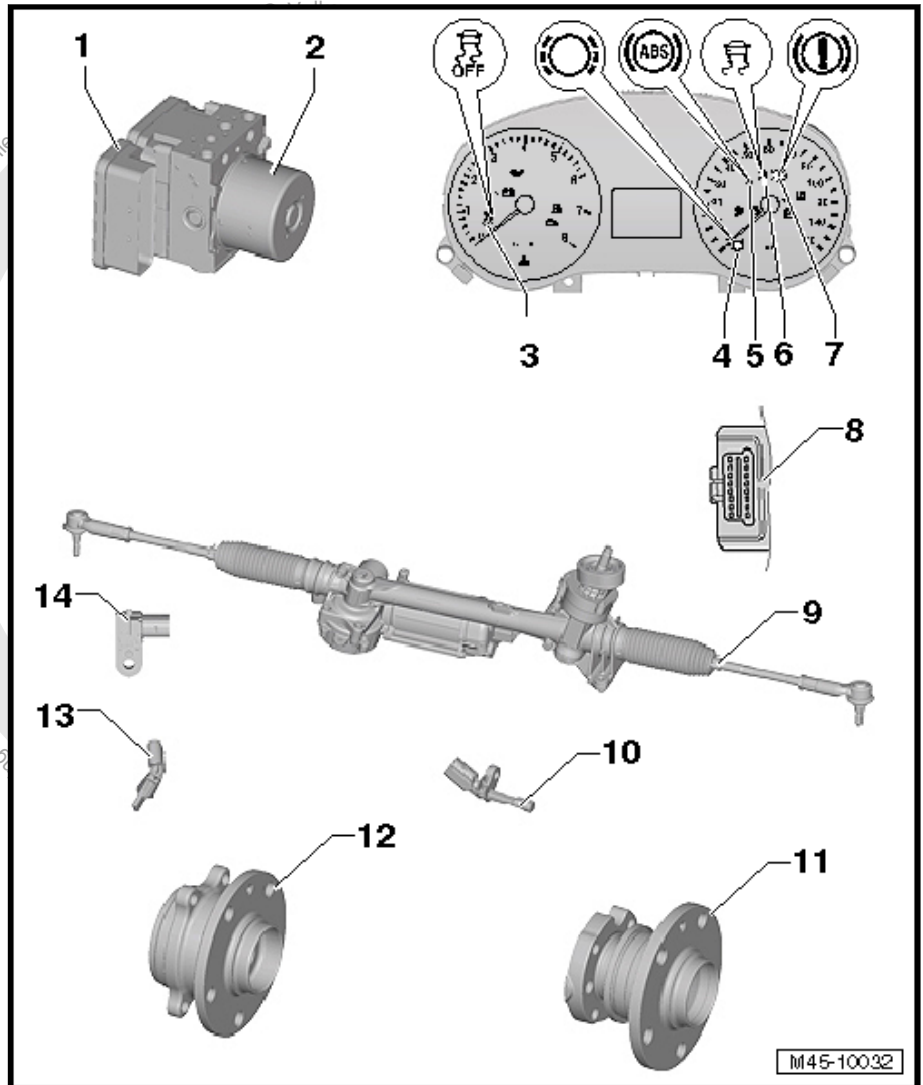
- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.5 , page 35](#) .

5 - ABS Indicator Lamp -K47-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.5 , page 35](#) .

6 - ASR/ESP Indicator Lamp -K155-

- ❑ Only on vehicles with ABS/EDL/ASR/ESP
- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to ➤ [3.5 , page 35](#) .





7 - Brake System Indicator Lamp -K118-

- ❑ Component location: in the instrument cluster
- ❑ Function. Refer to [⇒ 3.5, page 35](#) .

8 - Diagnostic Connection

- ❑ Component location: driver side footwell cover

9 - Steering Angle Sensor -G85-

- ❑ The Steering Angle Sensor -G85- is installed in the steering gear. Refer to [⇒ S6 system Components, Removing and Installing", page 145](#) .
- ❑ Refer to Vehicle Diagnostic Tester for the Steering Angle Sensor -G85- fault diagnostics

10 - Rear Speed Sensor

- ❑ Removing and installing. Refer to [⇒ 5, page 136](#) .

11 - Rear Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

12 - Front Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

13 - Front Speed Sensor

- ❑ Removing and installing. Refer to [⇒ 5, page 136](#) .

14 - Brake Lamp Switch -F-

- ❑ Including the Brake Pedal Switch -F47-
- ❑ Component location: on the brake master cylinder
- ❑ Removing and installing. Refer to [⇒ 1.3.2 amp Switch, Removing and Installing", page 308](#) .



3 Malfunction Display via Indicator Lamps

⇒ "3.1 , page 25

⇒ 3.3 , page 30

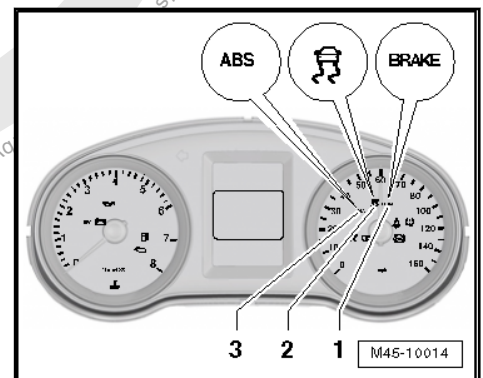
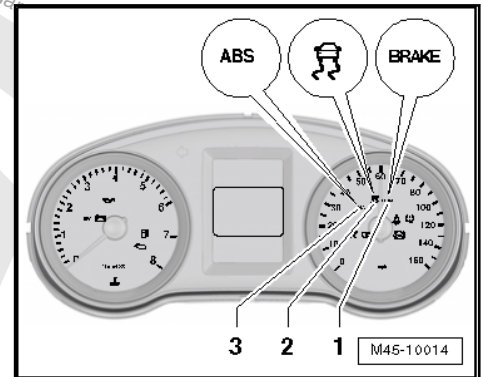
⇒ U3.4 SA and Canada, from 09/2010", page 32

⇒ 3.5 , page 35

3.1 ADBS/ASR

Item	Designation
1	Brake System Indicator Lamp -K118-
2	Traction Control Indicator Lamp -K86-
3	ABS Indicator Lamp -K47-

ABS Indicator Lamp -K47-



◆ If the ABS Indicator Lamp -K47- -3- does not go out after the ignition is switched on and the test sequence is complete, it could be caused by the following:

- a- Voltage supply is under 10 volts.
- b- There is an ABS malfunction. Refer to Vehicle Diagnostic Tester.



WARNING

The anti-locking brake system remains switched off with an ABS malfunction -3-, but the brake system remains fully operational.



-c- there was a malfunction since the last time the vehicle was started.

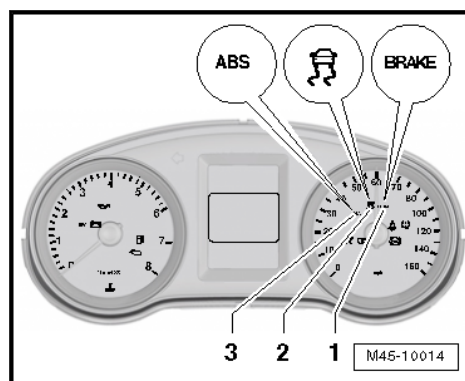
In this case the ABS indicator lamp will go out after the engine is restarted and the vehicle speed exceeds 20 km/h (12.4 mph).

-d- There is an interrupted connection from the instrument cluster to the ABS Control Module -J104-. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

-e- The instrument cluster is faulty.

- ◆ If the ABS Indicator Lamp -K47- -3- does not light up during the self-test, check the instrument cluster ➔ perform an electrical test. Refer to Vehicle Diagnostic Tester.

ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118-



- ◆ If the ABS Indicator Lamp -K47- -3- goes out but Brake System Indicator Lamp -K118- -1- lights up, the causes may be:

-a- Parking brake is engaged.

-b- Brake fluid level is too low (indicator lamp blinks).

Three warning tones will sound after switching on the ignition.

-c- There is a malfunction in the wiring guide to the Brake System Indicator Lamp -K118-. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

- ◆ If the ABS Indicator Lamp -K47- -3- and the Brake System Indicator Lamp -K118- -1- both light up, the ABS system is faulty. A change in braking behavior must be anticipated.

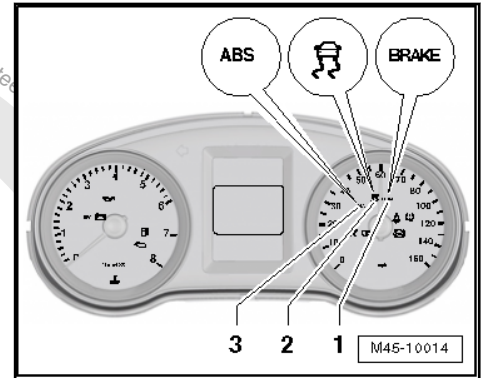


WARNING

After the ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118- light up, the rear wheels may lock prematurely when braking.



Traction Control Indicator Lamp -K86-



- ◆ If the Traction Control Indicator Lamp -K86- -2- does not go out after the ignition is switched on and the test sequence is complete, the cause may be:

-a- A malfunction in the activation of the Traction Control Indicator Lamp -K86-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations. Refer to Vehicle Diagnostic Tester.

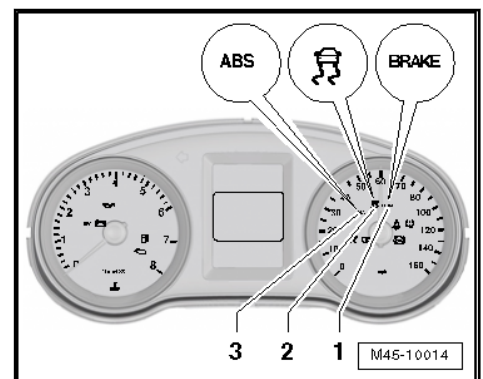
ASR malfunction. The ABS still works. Refer to Vehicle Diagnostic Tester, check the event memory.

If the Traction Control Indicator Lamp -K86- Blinks While Driving, the ASR System Is Operating in Regulated Mode.

- ◆ If the Traction Control Indicator Lamp -K86- -2- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

3.2 ABS/ASR, RHD (Not for North America Market)

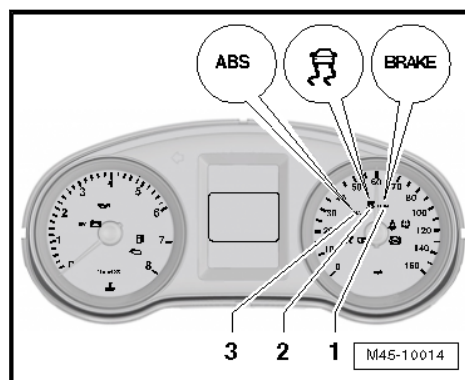
NOT FOR NORTH AMERICAN MARKET



Item	Designation
1	Brake System Indicator Lamp -K118-
2	Traction Control Indicator Lamp -K86-
3	ABS Indicator Lamp -K47-



ABS Indicator Lamp -K47-



- ◆ If the ABS Indicator Lamp -K47- -3- does not go out after the ignition is switched on and the test sequence is complete, it could be caused by the following:

- a- Voltage supply is under 10 volts.
- b- There is an ABS malfunction. Refer to Vehicle Diagnostic Tester.



WARNING

The anti-locking brake system remains switched off with an ABS malfunction -3-, but the brake system remains fully operational.

- c- there was a malfunction since the last time the vehicle was started.

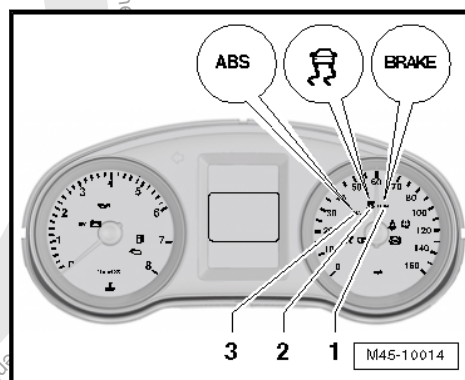
In this case the ABS indicator lamp will go out after the engine is restarted and the vehicle speed exceeds 20 km/h.

- d- There is an interrupted connection from the instrument cluster to the ABS Control Module -J104-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

- e- The instrument cluster is faulty.

- ◆ If the ABS Indicator Lamp -K47- -3- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118-



- ◆ If the ABS Indicator Lamp -K47- -3- goes out but Brake System Indicator Lamp -K118- -1- lights up, the causes may be:



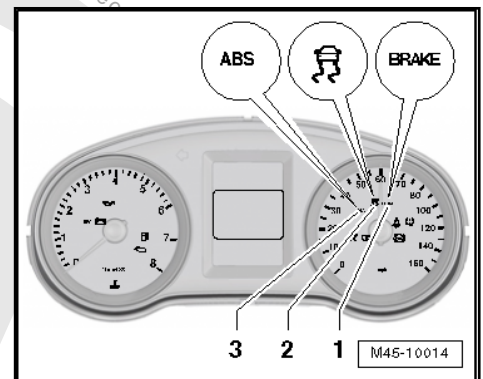
- a- Parking brake is engaged.
 - b- Brake fluid level is too low (indicator lamp blinks).
- Three warning tones will sound after switching on the ignition.
- c- There is a malfunction in the wiring guide to the Brake System Indicator Lamp -K118-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
- ◆ If the ABS Indicator Lamp -K47- -3- and the Brake System Indicator Lamp -K118- -1- both light up, the ABS system is faulty. A change in braking behavior must be anticipated.



WARNING

After the ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118- light up, the rear wheels may lock prematurely when braking.

Traction Control Indicator Lamp -K86-



- ◆ If the Traction Control Indicator Lamp -K86- -2- does not go out after the ignition is switched on and the test sequence is complete, the cause may be:
 - a- The system was shut off via the ASR/ESP Button -E256-.
 - b- There is a malfunction in the activation of the Traction Control Indicator Lamp -K86-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations. Refer to Vehicle Diagnostic Tester.

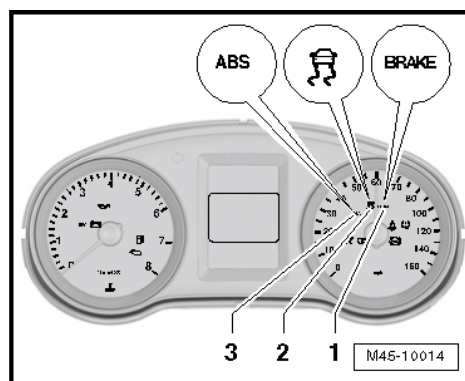
ASR malfunction. The ABS still works. Refer to Vehicle Diagnostic Tester, check the event memory.

If the Traction Control Indicator Lamp -K86- blinks while driving, the ASR system is operating in regulated mode.

- ◆ If the Traction Control Indicator Lamp -K86- -2- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

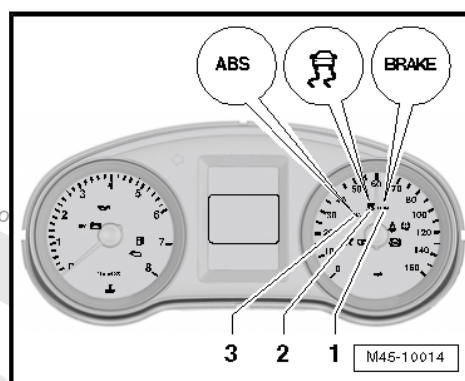


3.3 ABS/EDL/ASR/ESP



Item	Designation
1	Brake System Indicator Lamp -K118-
2	ASR/ESP Indicator Lamp -K155-
3	ABS Indicator Lamp -K47-

ABS Indicator Lamp -K47-



- ◆ If the ABS Indicator Lamp -K47- -3- does not go out after the ignition is switched on and the test sequence is complete, it could be caused by the following:

- a- Voltage supply is under 10 volts.
- b- There is an ABS malfunction. Refer to Vehicle Diagnostic Tester.



WARNING

The anti-locking brake system remains switched off with an ABS malfunction -3-, but the brake system remains fully operational.

- c- there was a malfunction in the speed sensor since the last time the vehicle was started.

In this case the ABS indicator lamp will go out after the engine is restarted and the vehicle speed exceeds 20 km/h (12.4 mph).

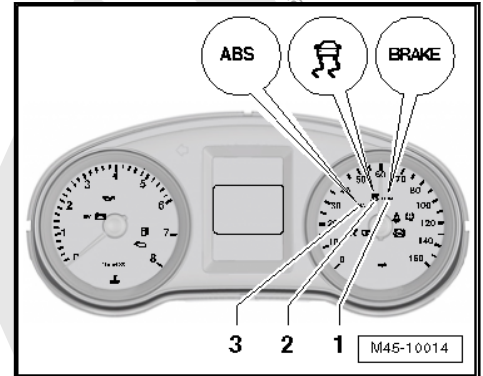
- d- The connection from instrument cluster to the ABS Control Module -J104- is interrupted. Refer to ➤ Wiring diagrams, Troubleshooting & Component locations.

- e- The instrument cluster is defective. Refer to Vehicle Diagnostic Tester



- ◆ If the ABS Indicator Lamp -K47- -3- does not light up during the self-test, check the instrument cluster ➔ perform an electrical test. Refer to Vehicle Diagnostic Tester.

ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118-



- ◆ If the ABS Indicator Lamp -K47- -3- goes out but Brake System Indicator Lamp -K118- -1- lights up, the cause of the malfunction may be:

- a- Parking brake is engaged.
- b- Brake fluid level is too low (indicator lamp blinks).

Three warning tones will sound after switching on the ignition.

- c- There is a malfunction in the wiring guide to the Brake System Indicator Lamp -K118-. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

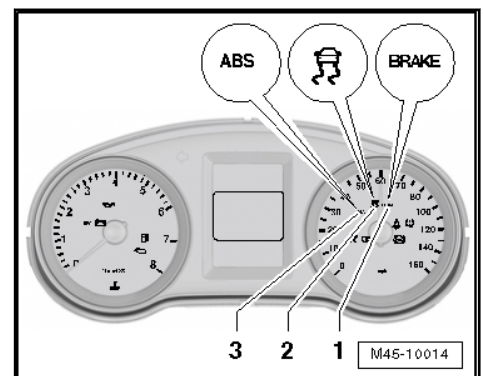
- ◆ If the ABS Indicator Lamp -K47- -3- and the Brake System Indicator Lamp -K118- -1- both light up, the ABS system is faulty. A change in braking behavior must be anticipated.



WARNING

After the ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118- light up, the rear wheels may lock prematurely when braking.

ASR/ESP Indicator Lamp -K155-



- ◆ If the ASR/ESP Indicator Lamp -K155- -2- does not go out after the ignition is switched on and the test sequence is complete, the cause may be:

Fault, that affects the ASR/ESP The ABS/EDL and EBD safety systems on the vehicle remain fully functional. Refer to Vehicle Diagnostic Tester to check the DTC memory.



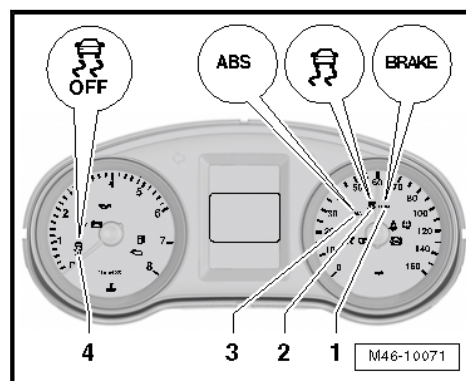
-a- There is a fault in the activation of the ASR/ESP Indicator Lamp -K155-. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

If the ASR/ESP Indicator Lamp -K155- Blinks While Driving, the ASR or ESP Systems are Controlling the System.

- ◆ If the ASR/ESP Indicator Lamp -K155- -2- does not light up during the self-test, check the instrument cluster ➔ perform an electrical test. Refer to Vehicle Diagnostic Tester.

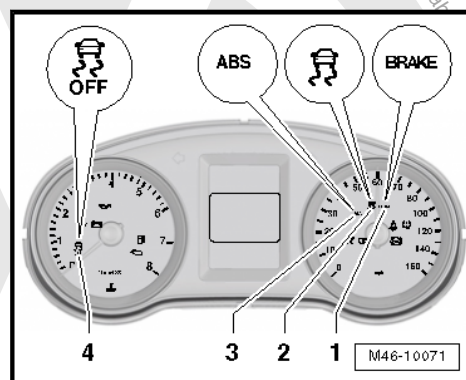
3.4 ABS/EDL/ASR/ESP, USA and Canada, from 09/2010

Indicator Lamps for vehicles, USA and Canada



Item	Designation
1	Brake System Indicator Lamp -K118-
2	ESC Indicator Lamp
3	ABS Indicator Lamp -K47-
4	ESC Off Indicator Lamp

ABS Indicator Lamp -K47-



- ◆ If the ABS Indicator Lamp -K47- -3- does not go out after the ignition is switched on and the test sequence is complete, it could be caused by the following:

-a- Voltage supply is under 10 volts.

-b- There is an ABS malfunction. Refer to Vehicle Diagnostic Tester.



WARNING

The anti-locking brake system remains switched off with an ABS malfunction, but the brake system remains fully operational.

-c- there was a malfunction in the speed sensor since the last time the vehicle was started.

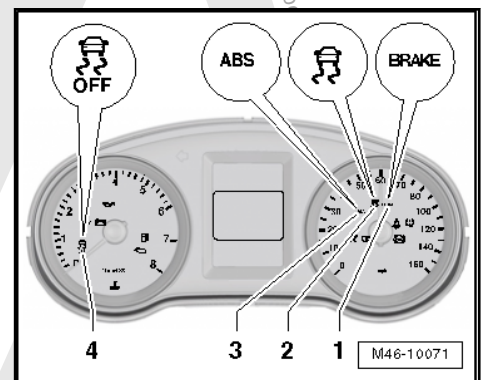
In this case the ABS indicator lamp will go out after the engine is restarted and the vehicle speed exceeds 20 km/h.

-d- The connection from instrument cluster to the ABS Control Module -J104- is interrupted. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

-e- The instrument cluster is faulty.

- ◆ If the ABS Indicator Lamp -K47- -3- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

ABS Indicator Lamp -K47- -3- and Brake System Indicator Lamp -K118- -1-



- ◆ If the ABS Indicator Lamp -K47- -3- goes out but Brake System Indicator Lamp -K118- -1- lights up, the cause of the malfunction may be:

-a- Parking brake is engaged.

-b- Brake fluid level is too low (indicator lamp blinks).

Three warning tones will sound after switching on the ignition.

-c- There is a malfunction in the wiring guide to the Brake System Indicator Lamp -K118- -1-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

- ◆ If the Brake System Indicator Lamp -K118- -1- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.
- ◆ If the ABS Indicator Lamp -K47- -3- and the Brake System Indicator Lamp -K118- -1- both light up, the ABS system is faulty. A change in braking behavior must be anticipated.

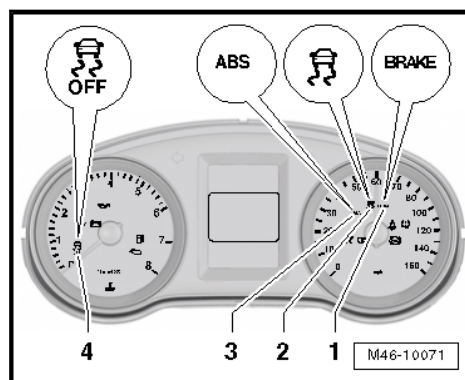


WARNING

After the ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118- light up, the rear wheels may lock prematurely when braking.



ESC Indicator Lamp -2-



- ◆ If the ESC Indicator Lamp -2- does not go out after the ignition is switched on and the test sequence is complete, malfunction causes may be:

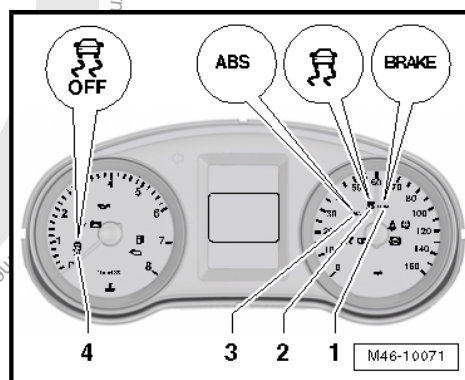
Fault, that affects the ASR/ESP The ABS/EDL and EBD safety systems on the vehicle remain fully functional. Refer to Vehicle Diagnostic Tester to check the DTC memory.

-a- A malfunction in the actuation of ESC Indicator Lamp -2-. Refer to ➤ Wiring diagrams, Troubleshooting & Component locations.

If the ESC Indicator Lamp -2- Blinks While Driving, the ASR or ESP Systems are Controlling the System.

- ◆ If the ESC Indicator Lamp -2- does not light up during the self-test, check the instrument cluster ➔ test electrical. Refer to Vehicle Diagnostic Tester.

ESC Indicator Lamp -4-



- ◆ If the ESC Indicator Lamp Off -4- does not go out after the ignition is switched on and the test sequence is complete, the causes may be:

ASR malfunction. The ABS still works. Refer to Vehicle Diagnostic Tester to check the event memory.

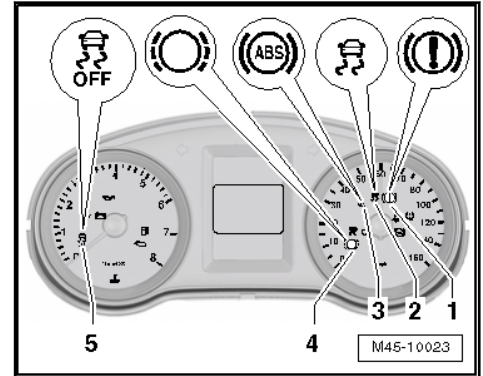
-a- A malfunction in the actuation of ESC Indicator Lamp. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

-b- There is a malfunction in the actuation. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations and Vehicle Diagnostic Tester.

- ◆ If the ESC indicator lamp -4- does not light up during the self-test, check the instrument cluster ➔ test electrical. Refer to Vehicle Diagnostic Tester.

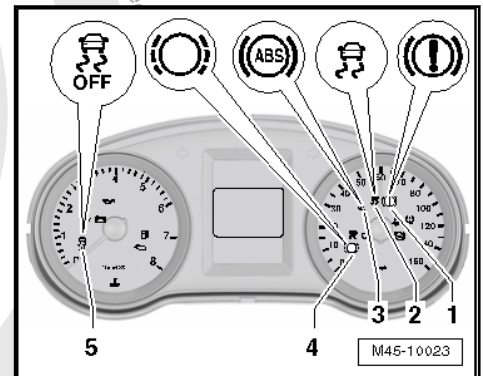
3.5 ABS/EDL/ASR/ESP

Warning Lamps



Item	Designation
1	Brake System Indicator Lamp -K118-
2	ASR/ESP Indicator Lamp -K155-
3	ABS Indicator Lamp -K47-
4	Brake Pad Wear Indicator Lamp -K32-
5	ASR/ESP Indicator Lamp 2 - K216-

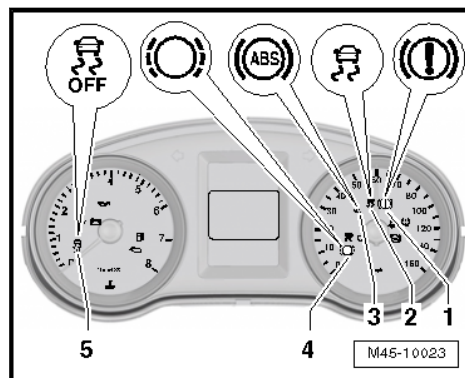
Brake System Indicator Lamp -K118- -1-



- ◆ If the warning lamp does not go out after the ignition is switched on, the causes could be:
 - ◆ If the warning lamp comes on when vehicle is driven, the causes may be:
 - a- Parking brake engaged.
 - b- Brake fluid level too low, Brake System Indicator Lamp -K118- flashing.
- Three warning tones will sound after switching on the ignition.
- c- There is a malfunction in the wiring guide to the Brake System Indicator Lamp -K118-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
 - d- There is a malfunction in the activation. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations and Vehicle Diagnostic Tester.
- ◆ If the Brake System Indicator Lamp -K118- -1- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.



ASR/ESP Indicator Lamp -K155- -2-



- ◆ If the ASR/ESP Indicator Lamp -K155- -2- does not go out after the ignition is switched on and the test sequence is complete, the cause may be:

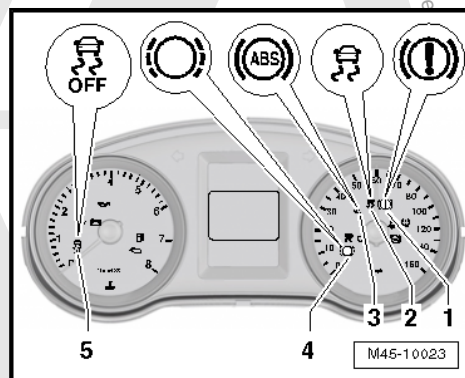
Fault, that affects the ASR/ESP The ABS/EDL and EBD safety systems on the vehicle remain fully functional. Refer to Vehicle Diagnostic Tester to check the DTC memory.

-a- There is a fault in the activation of the ASR/ESP Indicator Lamp -K155-. Refer to ➤ Wiring diagrams, Troubleshooting & Component locations and Vehicle Diagnostic Tester.

If the ASR/ESP Indicator Lamp -K155- -2- Blinks While Driving, the ASR or ESP Systems are Controlling the System.

- ◆ If the ASR/ESP Indicator Lamp -K155- -2- -3- does not light up during the self-test, check the instrument cluster ➤ perform an electrical. Refer to Vehicle Diagnostic Tester.

ABS Indicator Lamp -K47- -3-



- ◆ If the ABS Indicator Lamp -K47- -3- does not go out after the ignition is switched on and the test sequence is complete, the malfunction could be caused by the following:

- a- Voltage supply is under 10 volts.
- b- There is an ABS fault. Refer to Vehicle Diagnostic Tester to check the event memory.



WARNING

The anti-locking brake system remains switched off with an ABS malfunction, but the brake system remains fully operational.

- c- there was a malfunction in the speed sensor since the last time the vehicle was started.

In this case the ABS indicator lamp will go out after the engine is restarted and the vehicle speed exceeds 20 km/h.

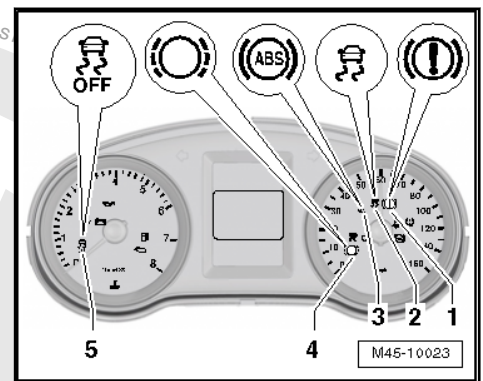
-d- The connection from instrument cluster to the ABS Control Module -J104- is interrupted. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

-e- An activation fault has occurred. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations and Vehicle Diagnostic Tester.

◆ If the ABS Indicator Lamp -K47- -3- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

-f- The instrument cluster is defective. Refer to Vehicle Diagnostic Tester

ABS Indicator Lamp -K47- -3- and Brake System Indicator Lamp -K118- -1-



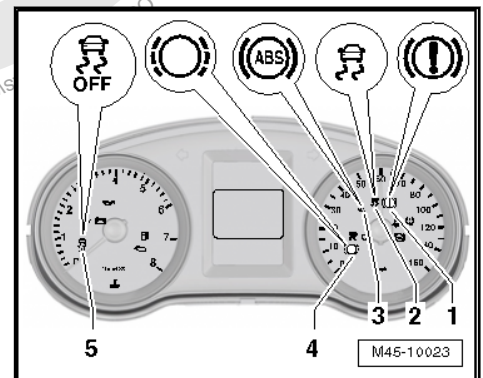
◆ If the ABS Indicator Lamp -K47- -3- and the Brake System Indicator Lamp -K118- -1- both light up, the ABS system is faulty. A change in braking behavior must be anticipated.



WARNING

After the ABS Indicator Lamp -K47- and Brake System Indicator Lamp -K118- light up, the rear wheels may lock prematurely when braking.

Brake Pad Wear Indicator Lamp -K32- -4-



◆ If the warning lamp does not go out after the ignition is switched on, the causes could be:

◆ If the warning lamp comes on when vehicle is driven, the causes may be:

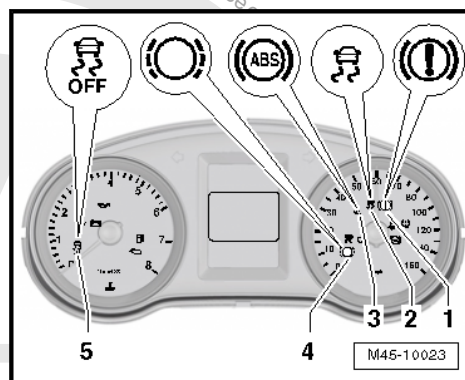


-a- Brake pads worn; check brake pads. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.

-b- There is a malfunction in the wiring. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

- ◆ If the ASR/ESP Indicator Lamp -K155- -4- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.

ASR/ESP Indicator Lamp 2 -K216- -5-



- ◆ If the ASR/ESP Indicator Lamp 2 -K216- -5- does not go out, the causes could be:

ASR malfunction. The ABS/ESP still works. Refer to Vehicle Diagnostic Tester to check the event memory.

-a- There is a fault in the activation of the ASR/ESP Indicator Lamp 2 -K216-. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

-b- An activation fault has occurred. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations and Vehicle Diagnostic Tester.

- ◆ If the ASR/ESP Indicator Lamp 2 -K216- -5- does not light up during the self-test, check the instrument cluster ⇒ perform an electrical test. Refer to Vehicle Diagnostic Tester.



4 Control Module and Hydraulic Unit

⇒ -4.1 Control Module and Hydraulic Unit", page 39

⇒ A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing", page 47

⇒ M4.3 odule, Separating from Hydraulic Unit", page 120

⇒ M4.4 odule, Installing on Hydraulic Unit", page 124

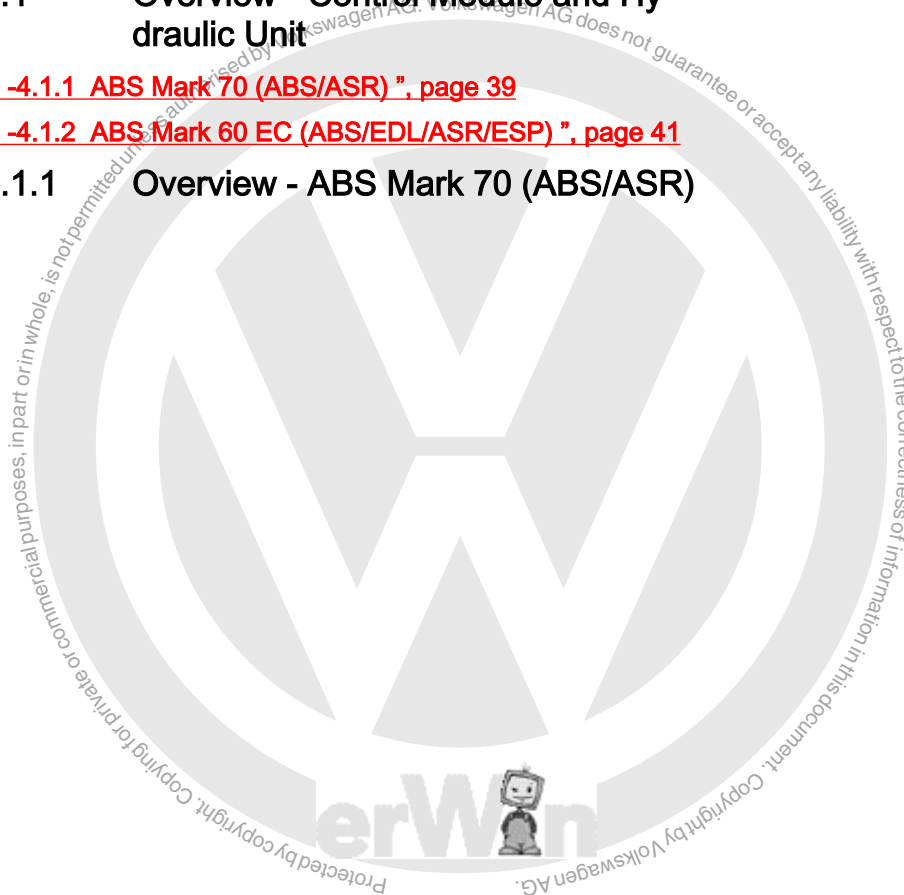
⇒ L4.5 ines, Attaching to Hydraulic Unit", page 128

4.1 Overview - Control Module and Hydraulic Unit

⇒ -4.1.1 ABS Mark 70 (ABS/ASR) ", page 39

⇒ -4.1.2 ABS Mark 60 EC (ABS/EDL/ASR/ESP) ", page 41

4.1.1 Overview - ABS Mark 70 (ABS/ASR)





1 - Brake Line

- ☐ 14 Nm
- ☐ Brake master cylinder/primary piston circuit to the ABS Hydraulic Unit -N55-
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

2 - Brake Line

- ☐ 14 Nm
- ☐ Brake master cylinder/secondary piston circuit to the ABS Hydraulic Unit -N55-
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

3 - Brake Booster with Master Brake Cylinder

- ☐ On gasoline engines, the required vacuum is supplied either by the intake manifold or by a vacuum pump.
- ☐ Function Test:
 - Forcefully press brake pedal several times with engine switched off. This dissipates any vacuum present in the unit.
 - Hold the brake pedal with average foot pressure and start the engine. If the brake booster is working properly, the brake pedal will be felt to give noticeably under foot (booster becomes effective).
- ☐ If malfunctioning: replace as complete unit.
- ☐ Refer to ➤ [B3 ooster/Brake Master Cylinder", page 304](#)
- ☐ Brake booster, removing and installing. Refer to ➤ [B3.5 ooster, Removing and Installing", page 370](#) .
- ☐ Brake master cylinder, removing and installing. Refer to ➤ [M3.4 aster Cylinder, Removing and Installing", page 329](#) .

4 - Brake Line

- ☐ 14 Nm
- ☐ To left rear brake caliper/brake cylinder
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

5 - Brake Line

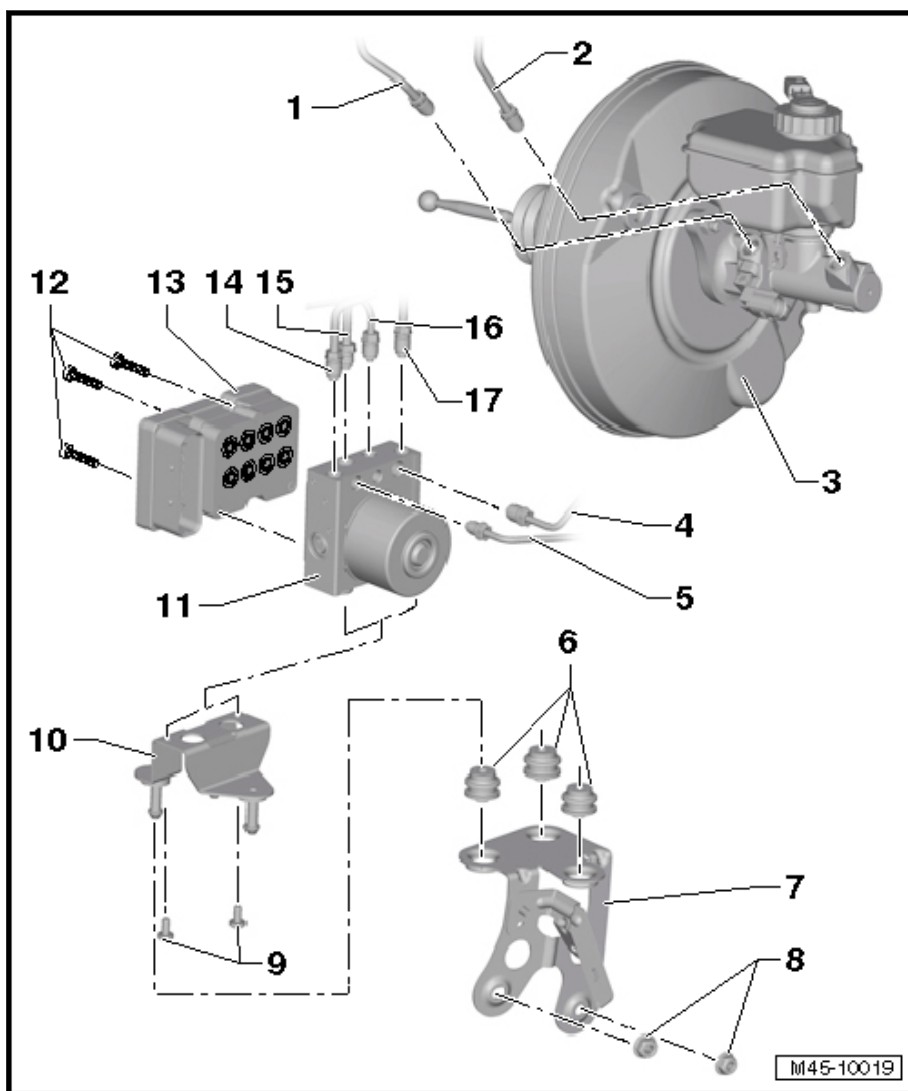
- ☐ 14 Nm
- ☐ To the right rear brake caliper/brake cylinder
- ☐ Identification: Pipe Fitting with M10 x 1 Threads

6 - Rubber Bushing

- ☐ Do not press the rubber bushings out of the bracket when installing the bracket.

7 - Bracket

- ☐ Is attached to the body





8 - Nut

- ☐ 8 Nm
- ☐ Quantity: 2

9 - Screw

- ☐ 8 Nm
- ☐ Quantity: 2

10 - Bracket

11 - ABS Hydraulic Unit -N55-

- ☐ Removing and installing. Refer to [⇒ A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing", page 47](#) .

12 - Screw

- ☐ 5.5 Nm
- ☐ Quantity: 3
- ☐ Always replace if removed

13 - ABS Control Module -J104-

- ☐ Removing and installing. Refer to [⇒ A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing", page 47](#) .
- ☐ Disconnect from the ABS Hydraulic Unit -N55-. Refer to [⇒ A4.3.1 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)", page 120](#) .

14 - Brake Line

- ☐ 14 Nm
- ☐ ABS Hydraulic Unit -N55- for the brake master cylinder/primary piston circuit
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

15 - Brake Line

- ☐ 14 Nm
- ☐ To the left front brake caliper
- ☐ Identification: Pipe Fitting with M10 x 1 Threads

16 - Brake Line

- ☐ 14 Nm
- ☐ To the right front brake caliper
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

17 - Brake Line

- ☐ 14 Nm
- ☐ ABS Hydraulic Unit -N55- to the brake master cylinder/secondary piston circuit.
- ☐ Identification: Pipe Fitting with M12 x 1 Threads

4.1.2 Overview - ABS Mark 60 EC (ABS/EDL/ASR/ESP)

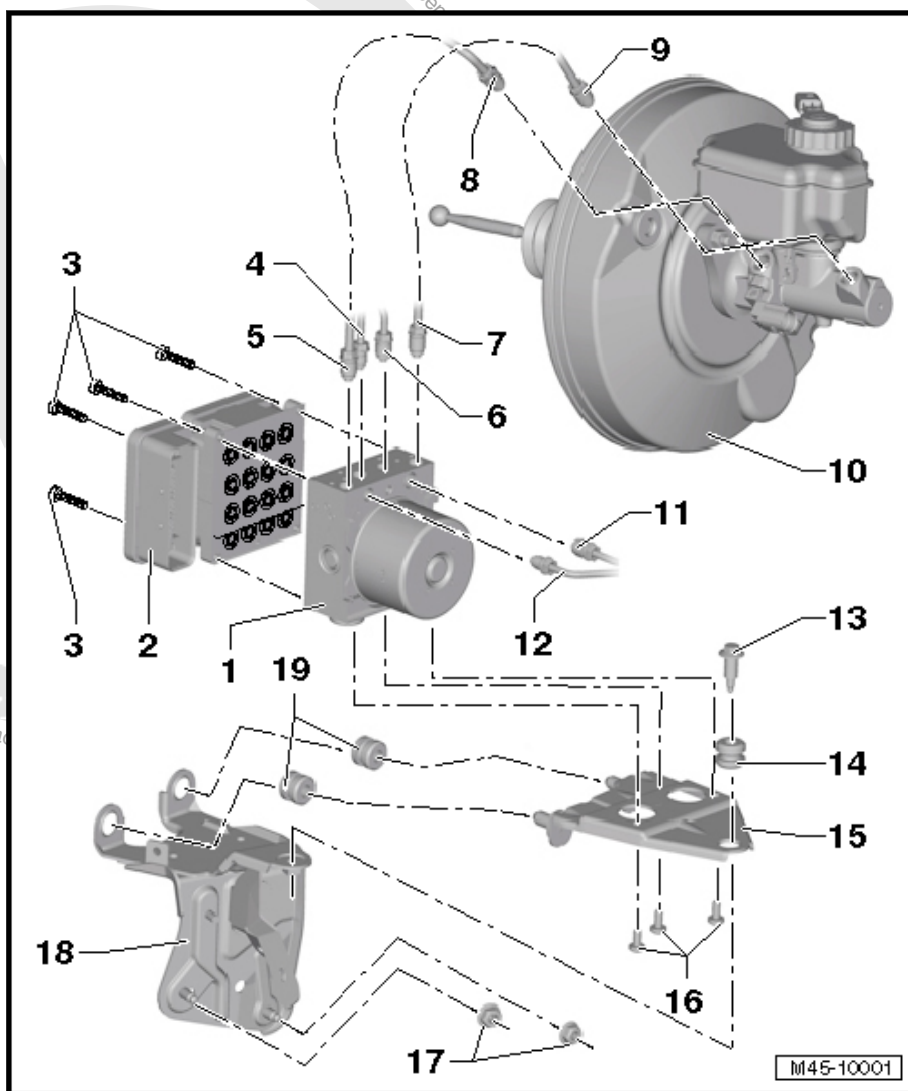


1 - ABS Hydraulic Unit -N55-

- ☐ Removing and installing. Refer to [⇒ A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing, page 47](#).
- ☐ Disconnecting the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-. Refer to [⇒ A4.3.2 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\), page 122](#).

2 - ABS Control Module - J104-

- ☐ Removing and installing. Refer to [⇒ A4.2 BS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing, page 47](#).
- ☐ Disconnecting the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-. Refer to [⇒ A4.3.2 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\), page 122](#).



3 - Screw

- ☐ 2 Nm \pm 0.8 Nm
- ☐ Quantity: 4
- ☐ Always replace if removed

4 - Brake Line

- ☐ 14 Nm
- ☐ To the left front brake caliper
- ☐ Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread

5 - Brake Line

- ☐ 14 Nm
- ☐ ABS Hydraulic Unit -N55- for the brake master cylinder/primary piston circuit
- ☐ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

6 - Brake Line

- ☐ 14 Nm
- ☐ To the right front brake caliper
- ☐ Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread

7 - Brake Line

- ☐ 14 Nm
- ☐ ABS Hydraulic Unit -N55- to the brake master cylinder/secondary piston circuit.



- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

8 - Brake Line

- ❑ 14 Nm
- ❑ Brake master cylinder/primary piston circuit to the ABS Hydraulic Unit -N55-
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

9 - Brake Line

- ❑ 14 Nm
- ❑ Brake master cylinder/secondary piston circuit to the ABS Hydraulic Unit -N55-
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

10 - Brake Booster with Master Brake Cylinder

- ❑ Refer to [⇒ B3 ooster/Brake Master Cylinder", page 304](#)
- ❑ Brake booster, removing and installing. Refer to [⇒ B3.5 ooster, Removing and Installing", page 370](#) .
- ❑ Brake master cylinder, removing and installing. Refer to [⇒ M3.4 aster Cylinder, Removing and Installing", page 329](#) .

11 - Brake Line

- ❑ 14 Nm
- ❑ To left rear brake caliper/brake cylinder
- ❑ Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread

12 - Brake Line

- ❑ 14 Nm
- ❑ To the right rear brake caliper/brake cylinder
- ❑ Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread

13 - Hex Fitting Bolt

- ❑ 8 Nm

14 - Rubber Bushing

15 - Bracket

- ❑ After installing, make sure it fits properly

16 - Screw

- ❑ 8 Nm
- ❑ Quantity: 3

17 - Nut

- ❑ 8 Nm
- ❑ Quantity: 2

18 - Bracket

19 - Rubber Bushing

- ❑ Do not press the rubber bushings out of the bracket when installing the bracket.

4.1.3 Overview - RHD, ABS Mark 70 (ABS/ASR) (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET



1 - Brake Line

- ☐ Brake master cylinder/secondary piston circuit to hydraulic unit
- ☐ Identification: tube fitting with threads M 12 x 1
- ☐ 14 Nm

2 - Brake Line

- ☐ Brake master cylinder/primary piston circuit to hydraulic unit
- ☐ Identification: tube fitting with threads M 10 x 1
- ☐ 14 Nm

3 - Brake Booster

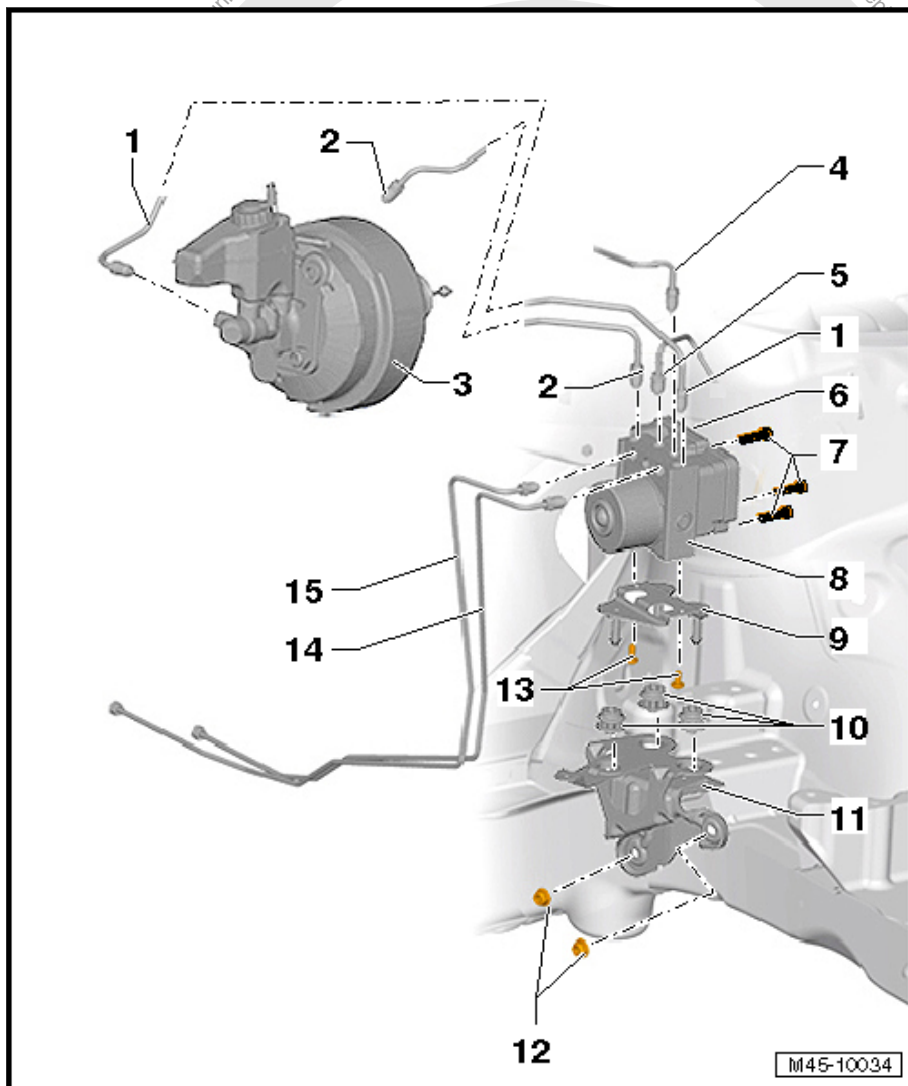
- ☐ Overview. Refer to ➤ [B3 Booster/Brake Master Cylinder](#), page 304.

4 - Brake Line

- ☐ To the right front brake caliper
- ☐ Identification: tube fitting with threads M 10 x 1
- ☐ 14 Nm

5 - Brake Line

- ☐ To the left front brake caliper
- ☐ Identification: tube fitting with threads M 12 x 1
- ☐ 14 Nm



6 - ABS Control Module -J104-

- ☐ Removing and installing. Refer to ➤ [A4.2.4 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, RHD with ABS Mark 70 ABS/ASR \(Not for North America Market\)](#), page 71.
- ☐ Disconnecting from the ABS Hydraulic Unit -N55-. Refer to ➤ [A4.3.1 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)](#), page 120.

7 - Torx® Socket Bolt

- ☐ 5.5 Nm
- ☐ Use new bolts.

8 - ABS Hydraulic Unit -N55-

- ☐ Removing and installing. Refer to ➤ [A4.2.4 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, RHD with ABS Mark 70 ABS/ASR \(Not for North America Market\)](#), page 71.
- ☐ Disconnecting the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-. Refer to ➤ [A4.3.1 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)](#), page 120.

9 - Bracket

10 - Rubber Bushing

- ☐ When installing the bracket, make sure the rubber bushing does not push out of the bracket.

11 - Bracket



- ☐ Spray the rubber buffers -item 10- ➔ [Item 10 \(page 44\)](#) with Silicone Grease -D 007 000 A2- before installing.
- ☐ after installing, make sure it fits properly

12 - Hex Nut

- ☐ 20 Nm

13 - Hex bolt

- ☐ 8 Nm

14 - Brake Line

- ☐ To the left rear brake caliper
- ☒ Identification: tube fitting with threads M 12 x 1
- ☐ 14 Nm

15 - Brake Line

- ☐ To the right rear brake caliper
- ☐ Identification: tube fitting with threads M 10 x 1
- ☐ 14 Nm

4.1.4 Overview - RHD, ABS Mark 60 EC (ABS/EDL/ASR/ESP) (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET



1 - Brake Line

- ❑ Brake master cylinder/secondary piston circuit to hydraulic unit
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread
- ❑ 14 Nm

2 - Brake Line

- ❑ Brake master cylinder/primary piston circuit to hydraulic unit
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread
- ❑ 14 Nm

3 - Brake Booster

- ❑ Overview. Refer to ➤ [B3 ooster/Brake Master Cylinder", page 304](#).

4 - Brake Line

- ❑ To the right front brake caliper
- ❑ Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread
- ❑ 14 Nm

5 - Brake Line

- ❑ To the left front brake caliper
- ❑ Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread
- ❑ 14 Nm

6 - ABS Control Module -J104-

- ❑ Removing and installing. Refer to ➤ [A4.2.8 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, RHD with ABS Mark 60 EC ABS/EDL/ASR/ESP", page 105](#).
- ❑ Disconnecting from the ABS Hydraulic Unit -N55-. Refer to ➤ [A4.3.2 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\)", page 122](#).

7 - Torx® Socket Bolt

- ❑ 2 Nm + 0.8 Nm
- ❑ Use new bolts.

8 - Rubber Bushing

- ❑ When installing the bracket, make sure the rubber bushing does not push out of the bracket.

9 - Bracket

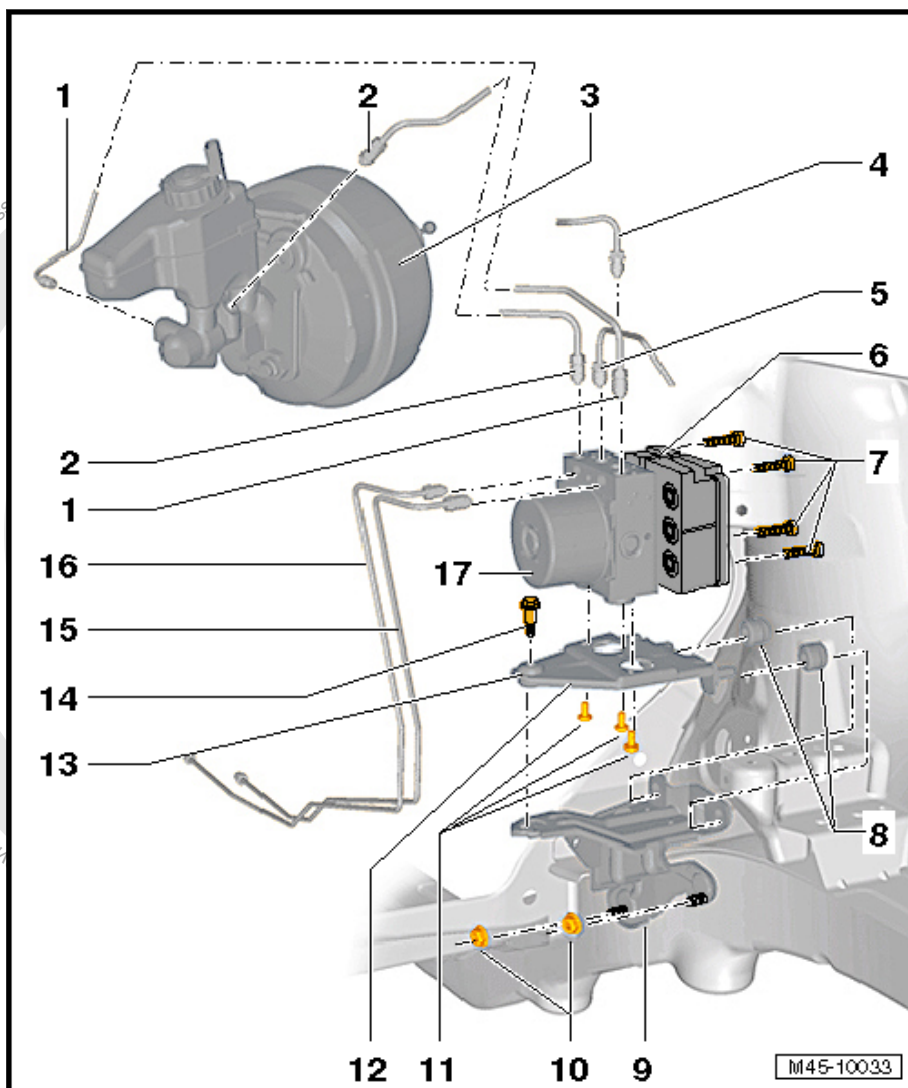
10 - Hex Nut

- ❑ 20 Nm

11 - Torx® Bolt

- ❑ 8 Nm

12 - Bracket





- ☐ Spray the damper rubbers -item 8- ➔ [Item 8 \(page 46\)](#) with Silicone Lubricant -D 007 000 A2- before installing.
- ☐ after installing, make sure it fits properly

13 - Rubber Bushing

14 - Hex Fitting Bolt

- ☐ 8 Nm

15 - Brake Line

- ☐ To the left rear brake caliper
- ☐ Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread
- ☐ 14 Nm

16 - Brake Line

- ☐ To the right rear brake caliper
- ☐ Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread
- ☐ 14 Nm

17 - ABS Hydraulic Unit -N55-

- ☐ Removing and installing. Refer to ➔ [A4.2.8 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, RHD with ABS Mark 60 EC ABS/EDL/ASR/ESP", page 105](#) .
- ☐ Disconnecting the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-. Refer to ➔ [A4.3.2 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\)", page 122](#) .

4.2 ABS Control Module -J104- / ABS Hydraulic Unit -N55-, Removing and Installing

➔ [A4.2.1 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 5-Cylinder Gasoline Engine and ABS Mark 70 ABS/ASR", page 47](#)

➔ [A4.2.2 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 70 ABS/ASR", page 54](#)

➔ [A4.2.3 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Diesel Engine and ABS Mark 70 ABS/ASR", page 62](#)

➔ [A4.2.5 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 5-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP", page 80](#)

➔ [A4.2.6 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP", page 87](#)

➔ [A4.2.7 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing with 4-Cylinder Diesel Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP", page 95](#)

➔ [A4.2.9 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, Hybrid and ABS Mark 60 EC ABS/EDL/ASR/ESP", page 114](#)

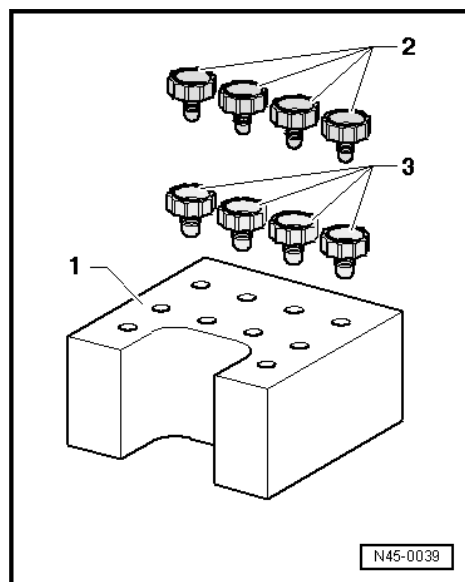
4.2.1 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, with 5-Cylinder Gasoline Engine and ABS Mark 70 ABS/ASR

Special tools and workshop equipment required



- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-
- ◆ Hose Clip Pliers -VAS6340-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

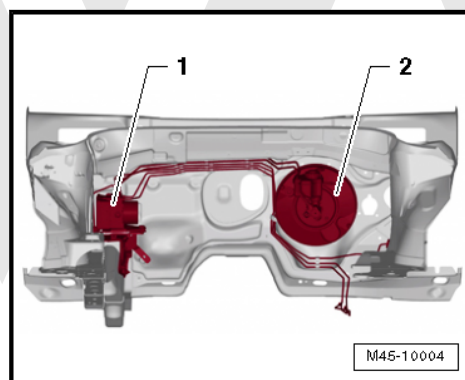
1 - Transportation Protection for Valve Body (Foam)

2 - M10 Plugs

3 - M12 Plugs

Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP, Mark 60 EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

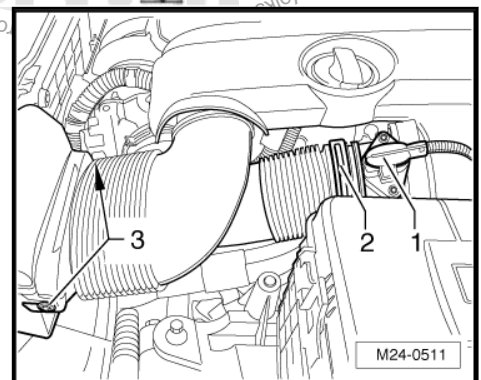


Caution

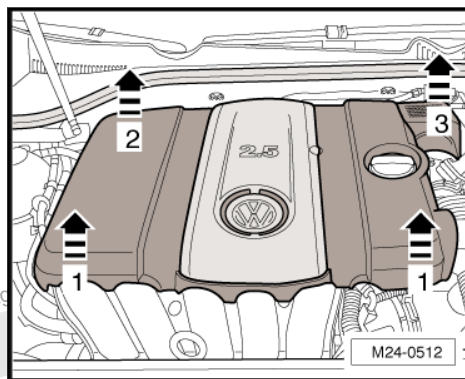
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

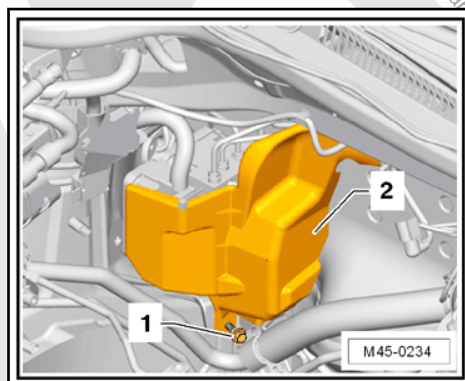
- Open clamp -2- and remove intake hose.
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.



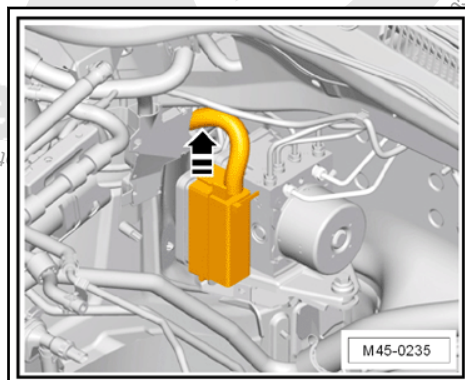
- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



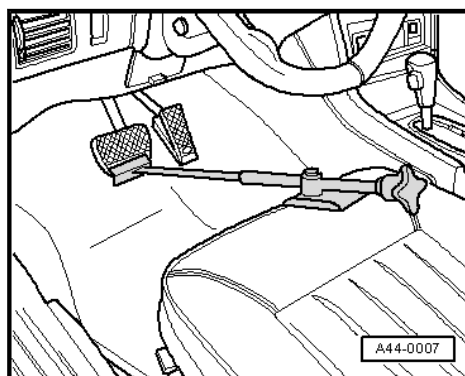
- Carefully swivel engine cover out of rear area.



- If equipped, remove the nut -1- and remove the heat shield -2-.
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.

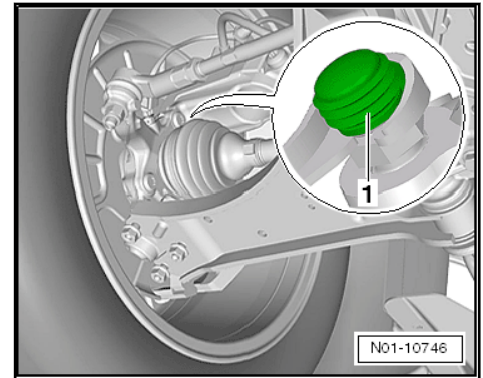


- Insert the Brake Pedal Actuator -VAG1869/2-.

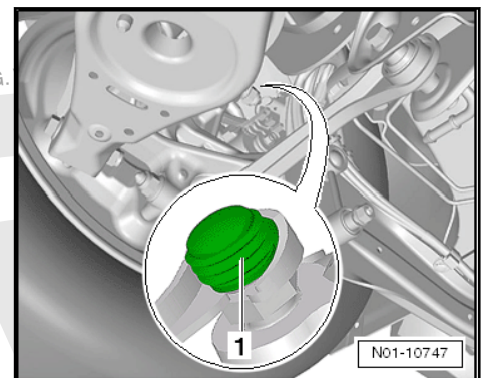




- Remove front left caps -1-.

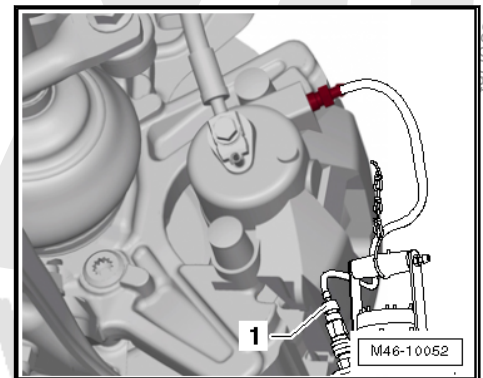


- Remove rear left caps -1-.

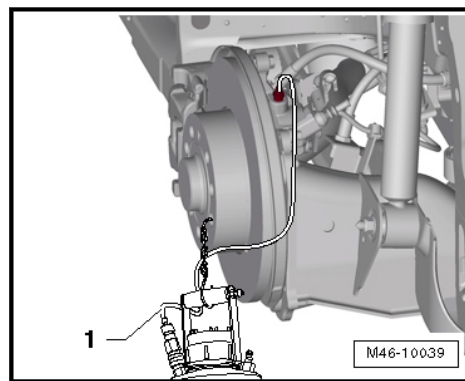


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the left rear brake caliper breather valve.



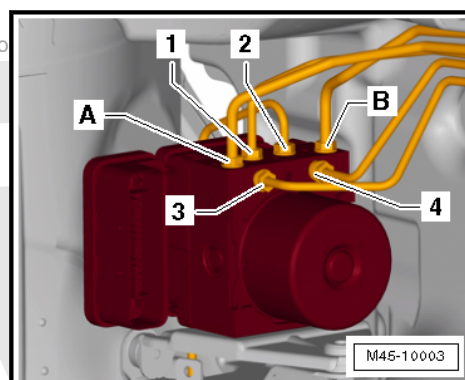
- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.

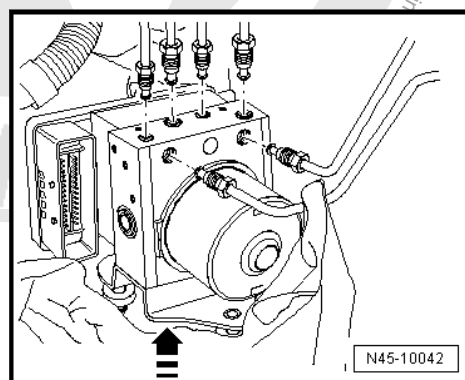
- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make Sure No Brake Fluid Gets on the Contacts.

- Mark brake lines -A and B- from brake master cylinder.



- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Mark brake lines (brake calipers) -1 to 4-, unscrew and seal.
- Remove the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- in direction of -arrow- and pull upward out of the shock absorbers.





- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 10- ➔ [Item 10 \(page 41\)](#) from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

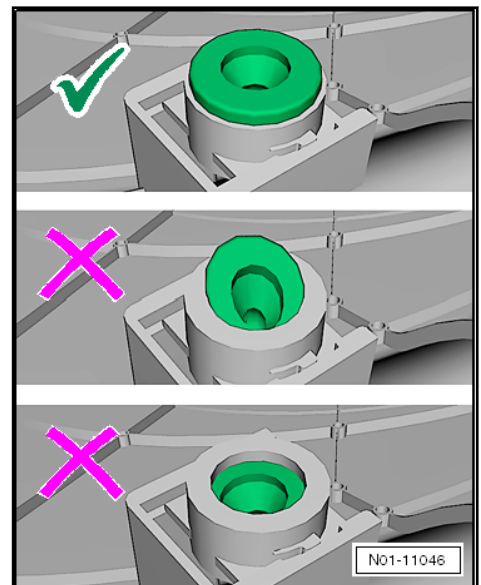
- ◆ Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.
- ◆ Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.



WARNING

When installing the bracket, make sure the rubber bushing does not push out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



- Connect the battery. Refer to ⇒ **Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.**
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ **S6 ystem”, page 457** .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 -G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Use the Vehicle Diagnostic Tester.

- ◆
- ◆
- ◆
- ◆
- ◆

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆
- ◆
- ◆
- ◆
- ◆

Tightening Specifications

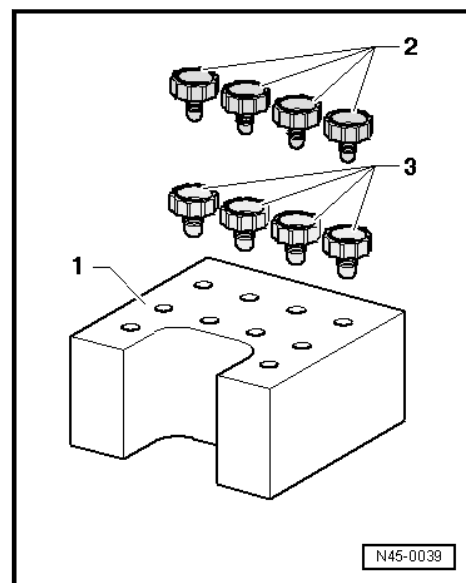
- ◆ Refer to ⇒ **-4.1 Control Module and Hydraulic Unit”, page 39**
- ◆ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.

4.2.2 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 70 ABS/ASR

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-.
- ◆ Hose Clip Pliers -VAS6340-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

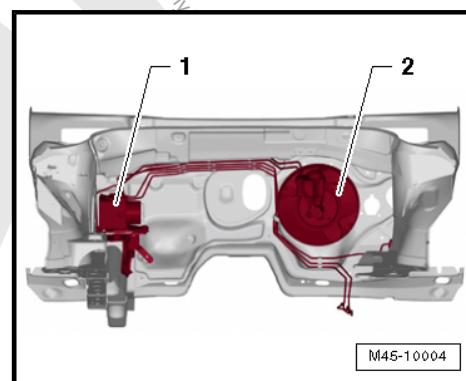
1 - Transportation Protection for Valve Body (Foam)

2 - M10 Plugs

3 - M12 Plugs

Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!



- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

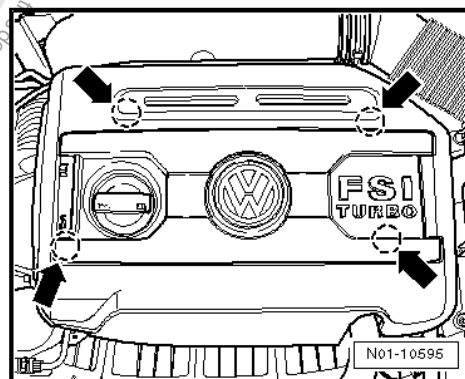


Caution

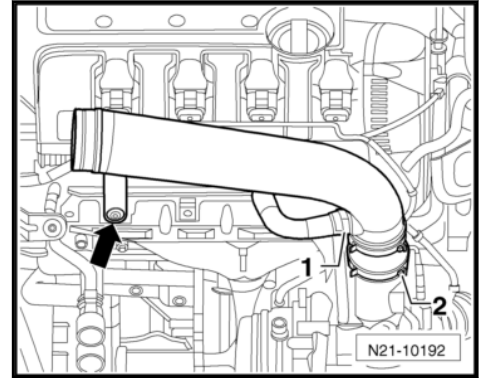
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ Follow the steps for disconnecting the battery.

Vehicles with 2.0L Gasoline Engine and Turbocharger

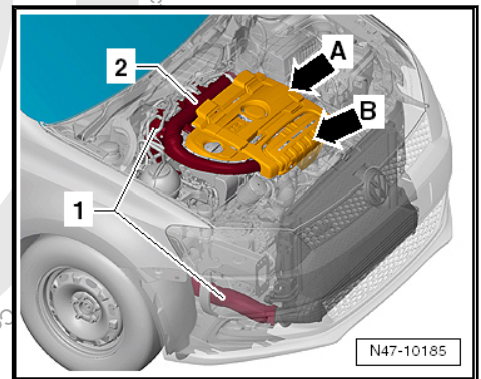


- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Open the clamp and remove the air guide hose from the air filter. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- Press the release button to remove the air duct hose -1-.



- Remove the air duct hose -1- and move it to the side.
- Remove the screw -arrow- for the air guide pipe.
- Remove the air duct pipe; to do this, loosen the hose clamp -2-.
- Remove the intake hose between the intermediate pipe and the turbocharger.
- Seal the turbocharger with the Engine Bung Set -VAS6122-.

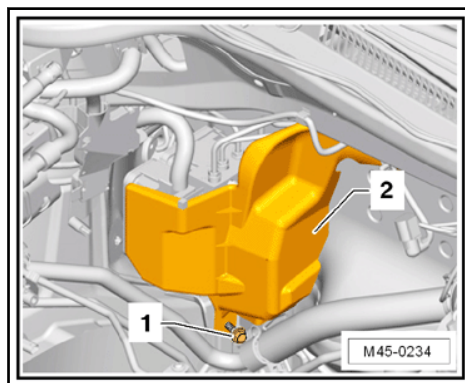
Vehicles with 1.4L Gasoline Engine, Turbocharger and Compressor:



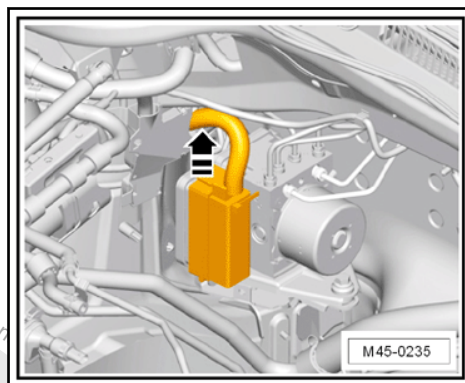
- Remove the engine cover -arrow A- and the heat shield -arrow B-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Remove the pressure pipe with the regulating flap control unit -2-. Refer to ⇒ Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.
- Remove the charge air pipe -1-. Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components.

Continuation for All Vehicles

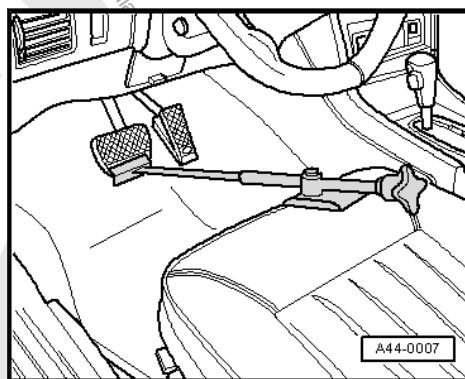
- If equipped, remove the nut -1- and remove the heat shield -2-.



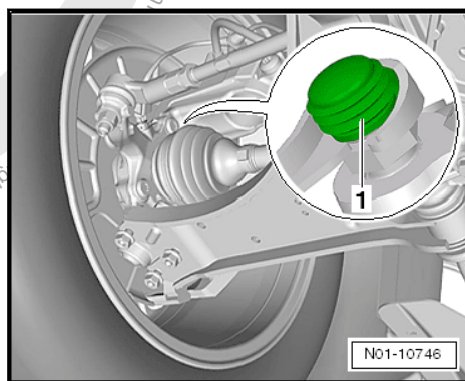
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.



- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.

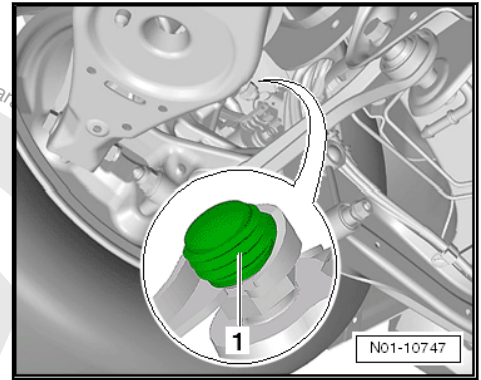


- Remove rear left caps -1-.

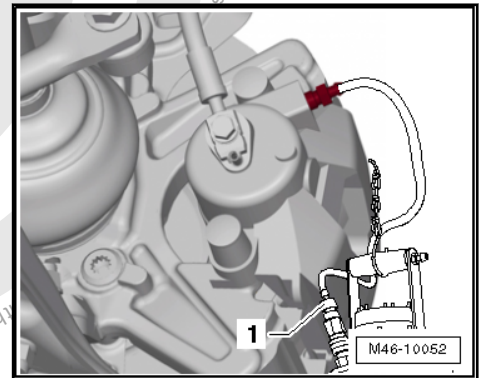


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



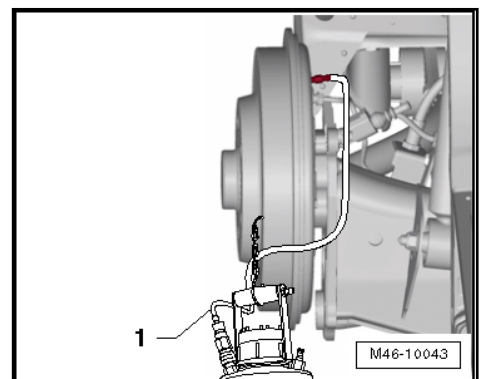
- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.

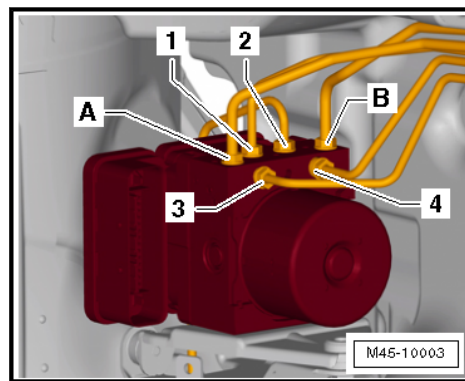


- Open the breather valve.
 - Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
 - Close the left front and left rear breather valves.
- Do not remove the Brake Pedal Actuator -VAG1869/2-.
- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

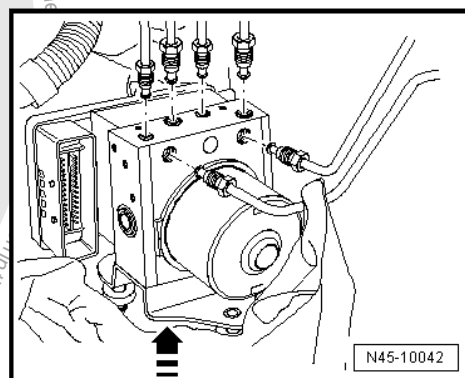
Make Sure No Brake Fluid Gets on the Contacts.

- Mark brake lines -A and B- from brake master cylinder.





- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Mark brake lines (brake calipers) -1 to 4-, unscrew and seal.
- Remove the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- in direction of -arrow- and pull upward out of the shock absorbers.



- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 10- ➔ [Item 10 \(page 41\)](#) from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

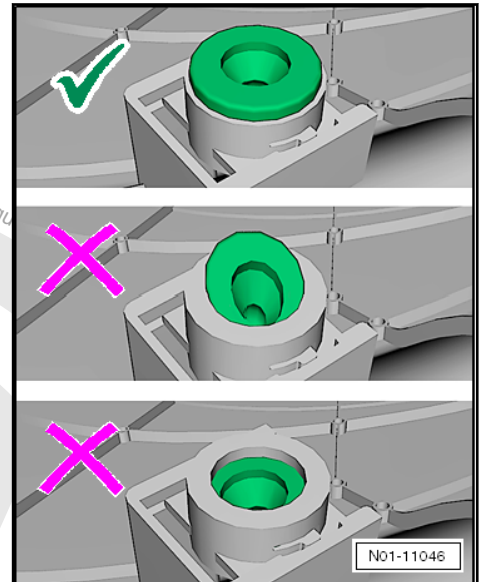
- ◆ Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.
- ◆ Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.



WARNING

When installing, make sure the damper rubber is not pushed out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ [S6 system", page 457](#).

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Code ABS Control Module J104

Tightening Specifications

- ◆ Refer to ⇒ [-4.1 Control Module and Hydraulic Unit", page 39](#)
- ◆ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.

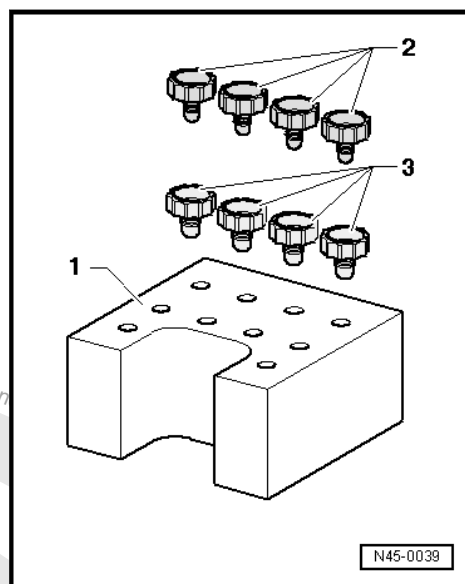


4.2.3 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, with 4-Cylinder Diesel Engine and ABS Mark 70 ABS/ASR

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-.
- ◆ Ring Wrench 7-Piece Set -3337-
- ◆ Wrench - Sw13 -T10384-
- ◆ Hydraulic Press - Subframe Assembly Tools -T10365-
- ◆ Transportation Lock -T10404-
- ◆ Engine Bung Set -VAS6122-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

1 - Transportation Protection for Valve Body (Foam)

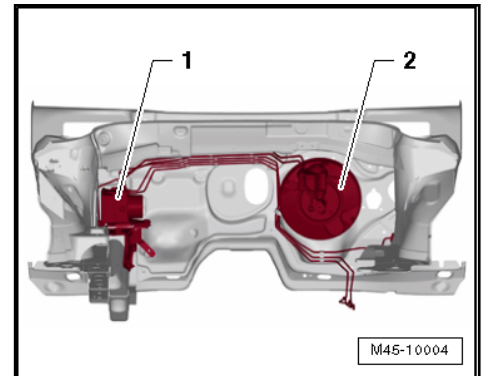
2 - M10 Plugs

3 - M12 Plugs



Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

- 1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-
- 2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

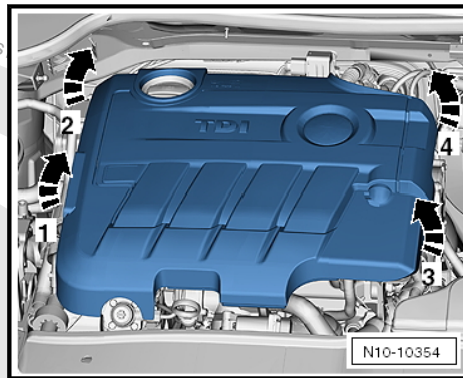


Caution

Danger of causing damage to electronic components when disconnecting the battery.

- ◆ **Follow the steps for disconnecting the battery.**

- Remove the noise insulation. Refer to ➔ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Remove engine cover in direction of -arrows-.



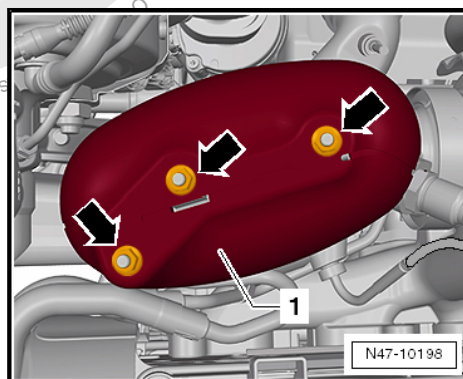
- Observe the given sequence -arrow 1 through 4-.
- Reach as far as possible under the engine cover.



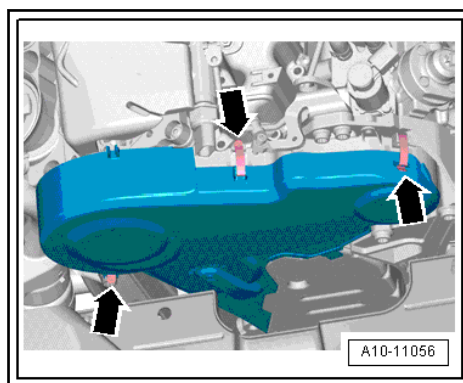
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always follow these steps to remove the engine cover.

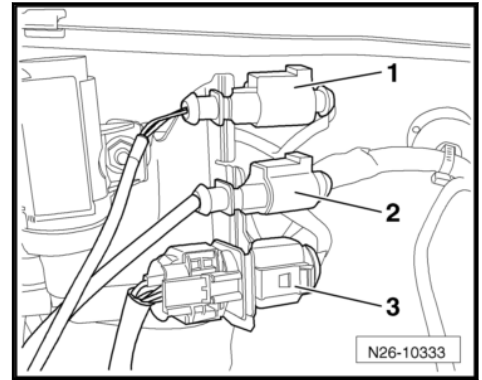
- Remove the nuts -arrows- and then remove the heat shield -1- from the diesel particulate filter.



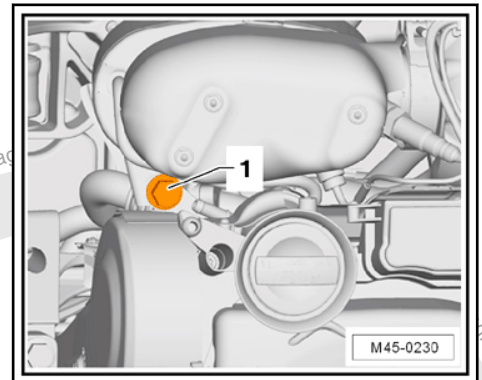
- Open the clips -arrows- and remove the upper toothed belt cover.



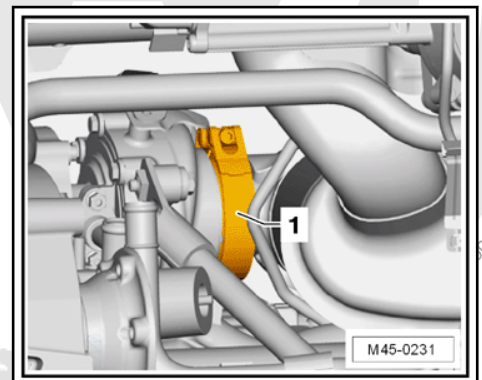
- Release and remove connectors -1 through 3-.



- Remove the particulate filter bracket bolts -1-.



- Loosen the clamps and remove the hoses from the particulate filter. Refer to ⇒ Rep. Gr. 26; Exhaust System.
- Raise the vehicle.
- Loosen the clamp -1- for the turbocharger/particulate filter connection and remove it.



Note

The illustration shows the clamp bolt -1- from underneath. This can also be installed from above in some cases.

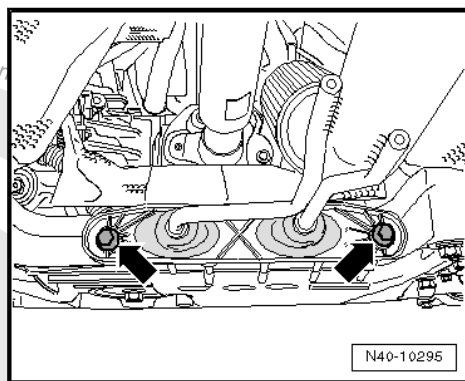
Vehicles with Absorption Catalytic Converter

- Disconnect the exhaust system between the particulate filter and the absorption catalytic converter. Refer to ⇒ Rep. Gr. 26; Exhaust System.
- Disconnect the exhaust system after the absorption catalytic converter. Refer to ⇒ Rep. Gr. 26; Exhaust System.

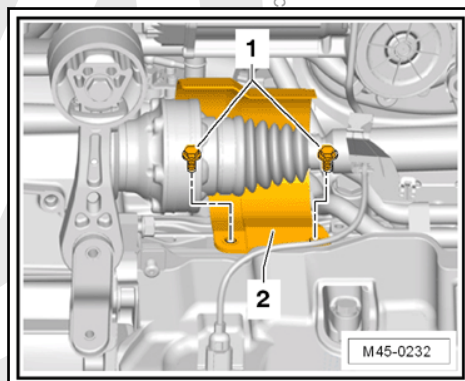


Continuation for All Vehicles

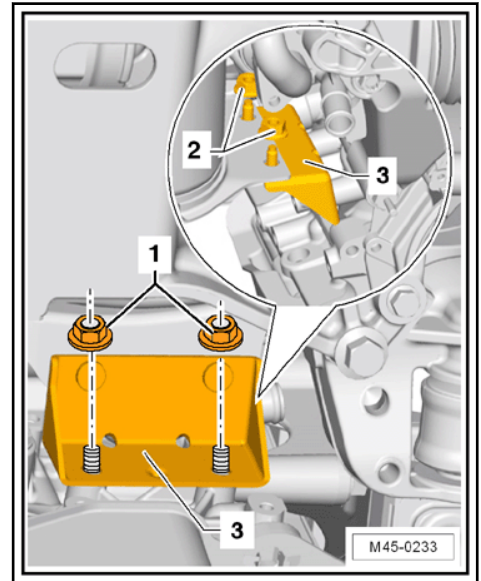
- If equipped, remove the EGR pipe from the particulate filter.
Refer to ➔ Rep. Gr. 26; Exhaust System.
- Disconnect the exhaust system. Refer to ➔ Rep. Gr. 26;
Exhaust Pipes/Mufflers; Overview - Muffler.
- Remove the exhaust system bracket from the subframe
-arrows-.



- Remove the bolts -1- and remove the drive shaft cover -2-.



- Unbolt the right drive axle from the flange, lay it down and
secure it. Refer to ➔ Suspension, Wheels, Steering; Rep.
Gr. 40; Drive Axles, Overview and Servicing.
- Remove the nuts -1-.
- Remove the nuts -2- using the Wrench - Sw13 -T10384-.
- Remove bracket for particulate filter -3-.



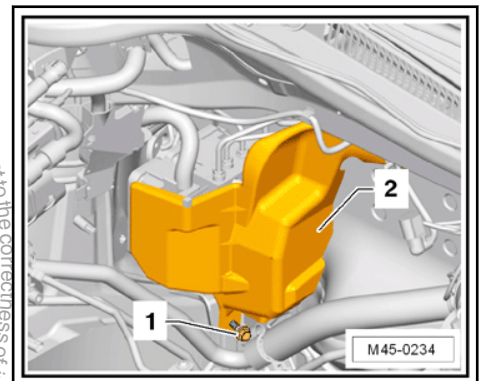
- Seal all openings using the Engine Bung Set -VAS6122-.
- Lower the particulate filter just enough so that it touches the steering gear.



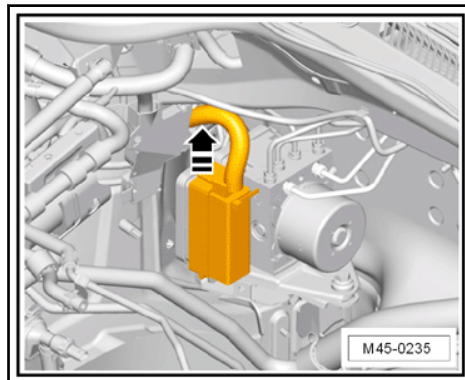
Note

Pay attention to the Exhaust Gas Temperature Sensor and the Heated Oxygen Sensor when lowering onto the cables in order to avoid any damage.

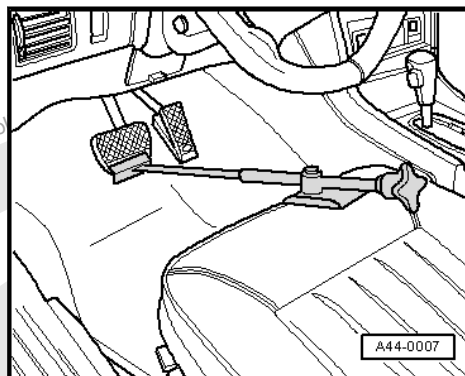
- If equipped, remove the nut -1- and remove the heat shield -2-.



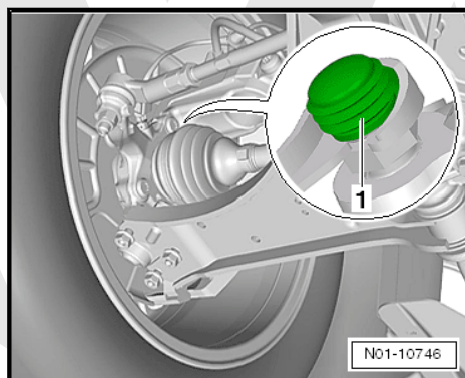
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.



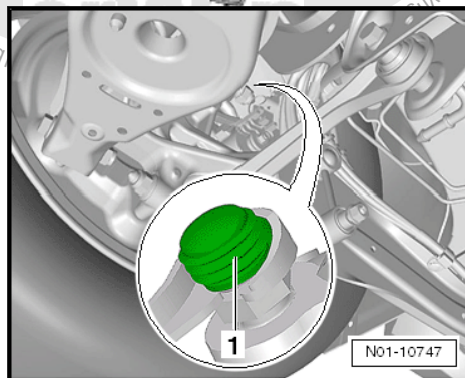
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.



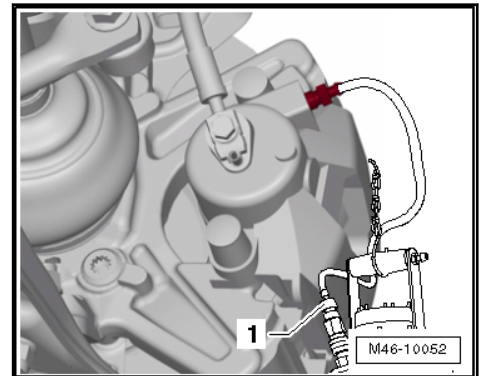
- Remove rear left caps -1-.



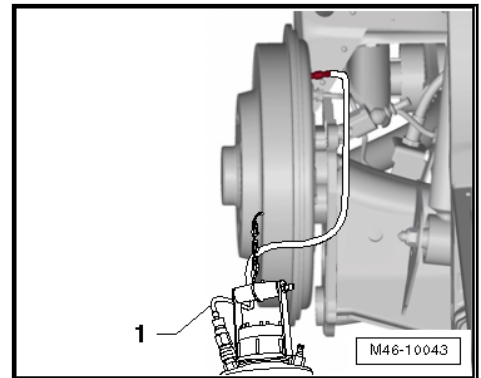


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



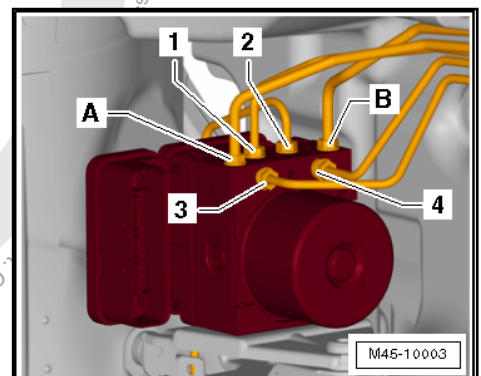
- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.



- Open the breather valve.
 - Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
 - Close the left front and left rear breather valves.
- Do not remove the Brake Pedal Actuator -VAG1869/2-.
- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

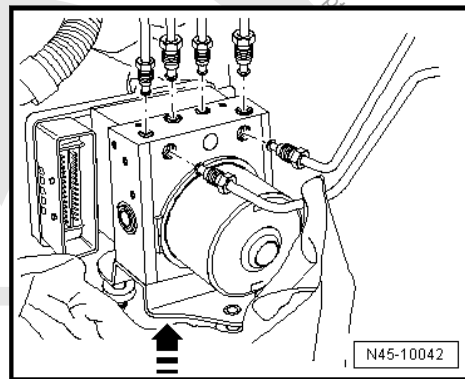
Make Sure No Brake Fluid Gets on the Contacts.

- Mark brake lines -A and B- from brake master cylinder.





- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Mark brake lines (brake calipers) -1 to 4-, unscrew and seal.
- Remove the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- in direction of -arrow- and pull upward out of the shock absorbers.



- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 10- ➔ [Item 10 \(page 41\)](#) from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

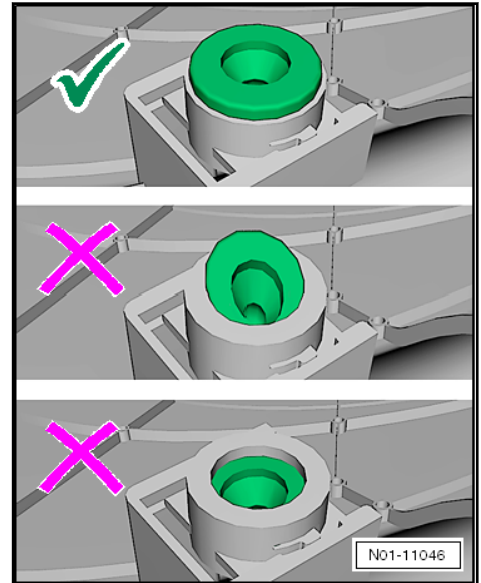
- ♦ *Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.*
- ♦ *Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.*



WARNING

When installing, make sure the damper rubber is not pushed out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ [S6 system](#), page 457 .

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester:

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system=ABS/ASR Mark 70
- ◆ Function
- ◆ Code ABS Control Module J104

Tightening Specifications

- ◆ Refer to ⇒ [-4.1 Control Module and Hydraulic Unit](#), page 39
- ◆ Refer to ⇒ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axles, Overview and Servicing.
- ◆ Refer to ⇒ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Muffler.
- ◆ Refer to ⇒ Rep. Gr. 26; Exhaust System.



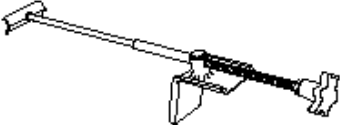
4.2.4 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, RHD with ABS Mark 70



ABS/ASR (Not for North America Market)

NOT FOR NORTH AMERICAN MARKET

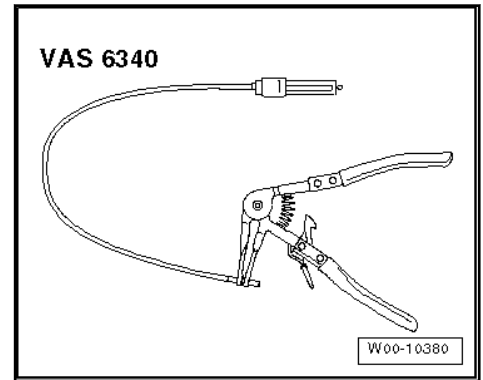
Special tools and workshop
equipment required

V.A.G 1331 	V.A.G 1410 
V.A.G 1869/2 	
	W45-0003

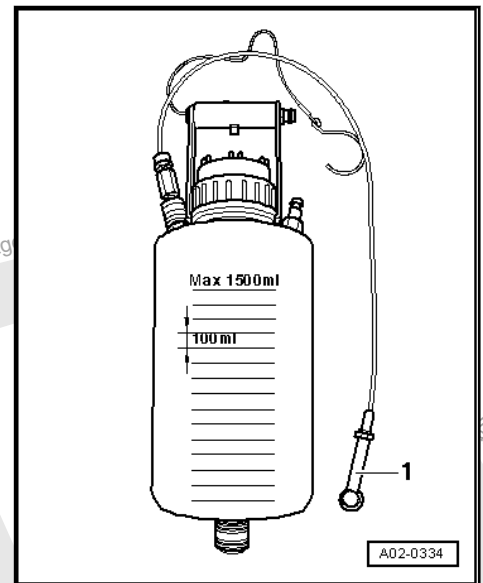
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-



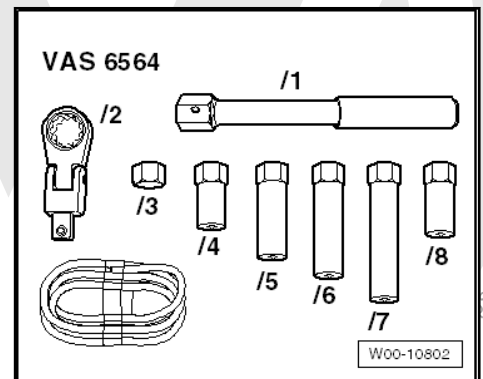
◆ Hose Clip Pliers -VAS6340-



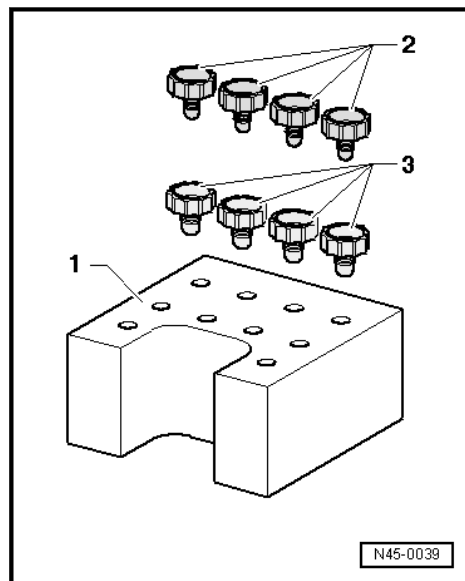
◆ Brake Charger/Bleeder Unit - Used Fluid Bottle - CRP1898020-



◆ Brake Bleeding Tool Set -VAS6564-



Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

1 - Transportation Protection for Valve Body (Foam)

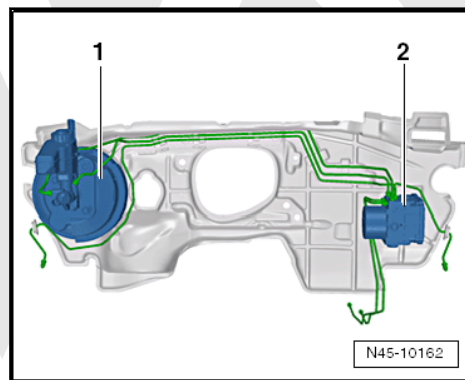
2 - M10 Plugs

3 - M12 Plugs

Perform the following:

Removing

Installation location:



1 - Brake Booster with Tandem Brake Master Cylinder

2 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-



Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!



- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Check ABS control module J104 coding

Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

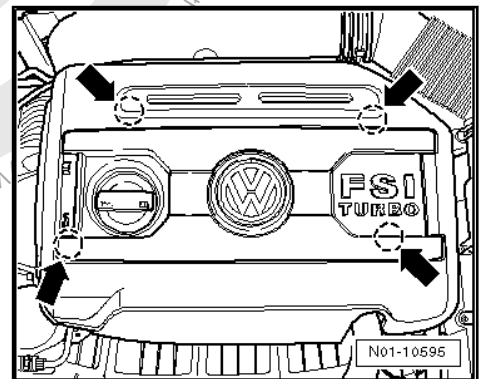


Caution

Danger of causing damage to electronic components when disconnecting the battery.

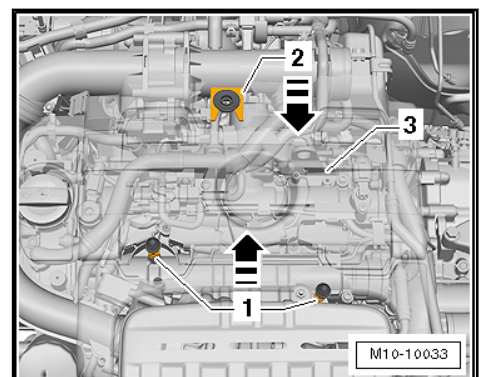
- ◆ ***Follow the steps for disconnecting the battery.***

Vehicles with 2.0L gasoline engine and turbocharger



- Remove the engine cover upward from the attaching points -arrows-. Refer to ➤ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

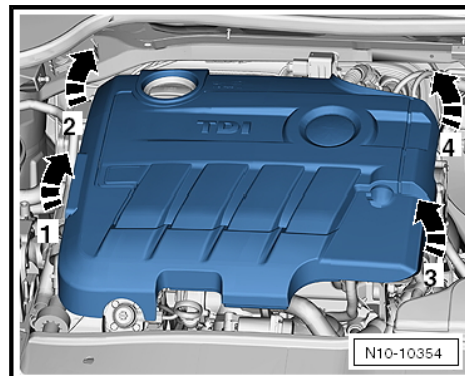
Vehicles with 1.4L gasoline engine, turbocharger and compressor:





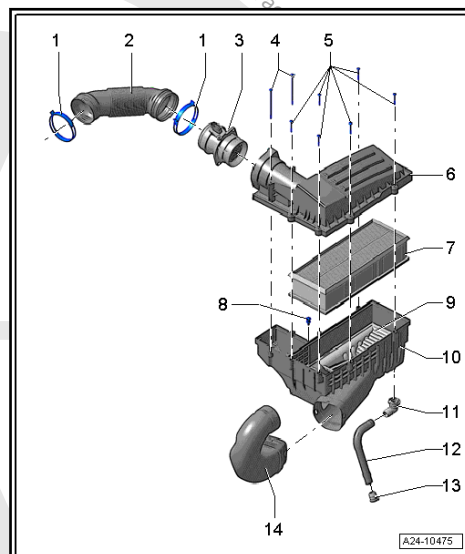
- Lift engine cover -3- upward at points -1- in -direction of arrow-.
- Pull cover out of bracket -2- in -direction of arrow-.

Vehicles with Diesel Engine:

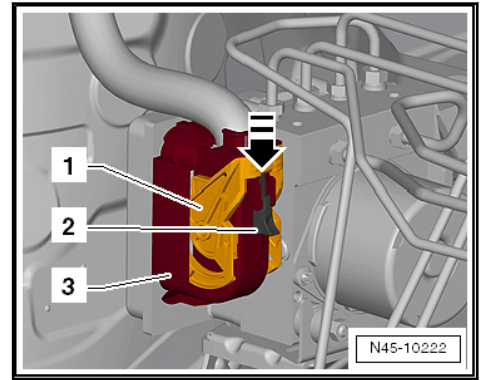


- Remove engine cover near -arrows-.
- Pay attention to the sequence given -1- to -4-. Refer to
⇒ Rep. Gr. 15; Cylinder Head; Engine Cover, Removing and
Installing.
- Reach as far as possible under the engine cover.

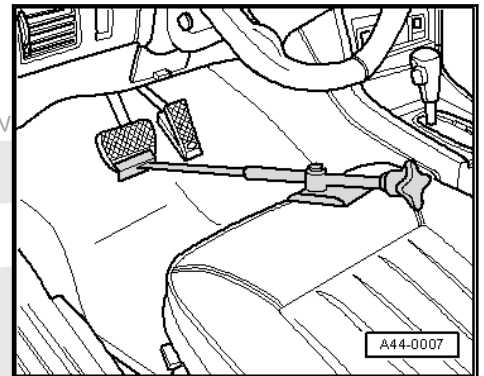
Continuation for All Vehicles:



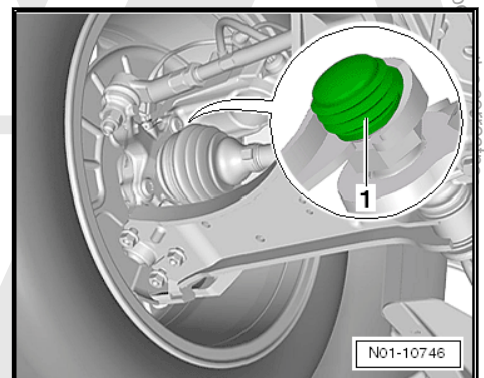
- If necessary, remove the intake hose -2-. Refer to ⇒ Rep.
Gr. 24; Air Filter; Overview - Air Filter Housing.
- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.
- Disconnect and remove the connector from the ABS Control
Module -J104- in -direction of the arrow-.



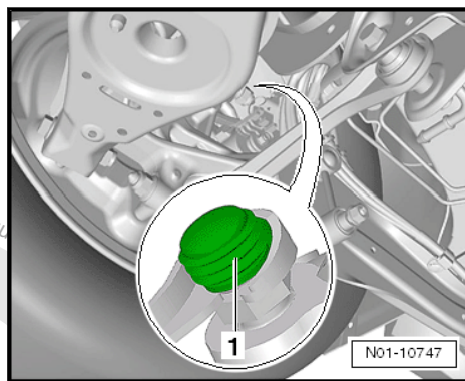
- Push fuse -2- downward in -direction of arrow-.
- Unlock the locking mechanism -1- to disconnect the connector -3- from the ABS Control Module -J104-.
- To do this, press the locking mechanism -1- downward in -direction of arrow-.
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.

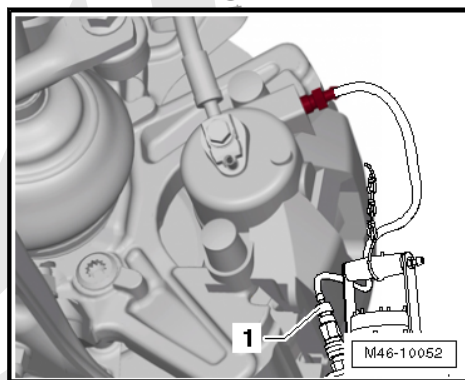


- Remove rear left caps -1-.

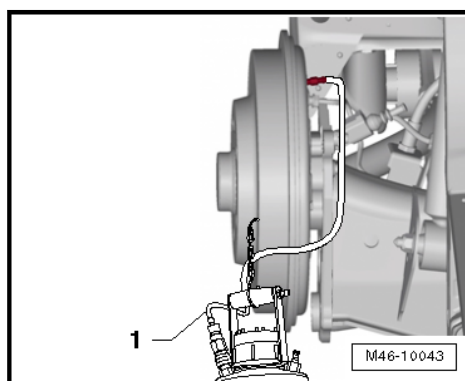


Use a suitable bleeder hose. It must fit tightly on the breather valve so that no air can get into the brake system.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.

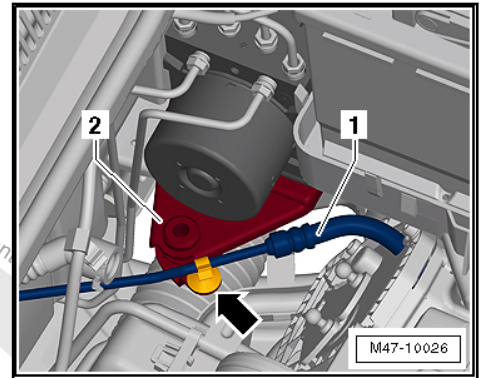


- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.



Vehicles with Manual Transmission:



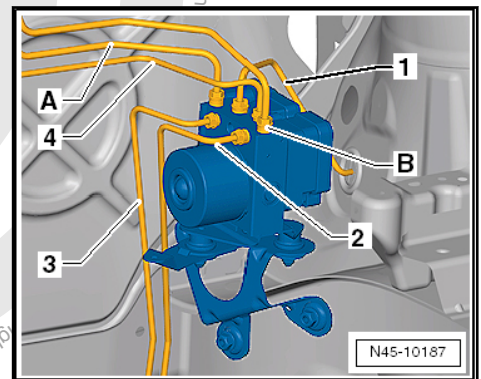
- Unclip hydraulic line -1- on bracket -2- -arrows-.

Continuation for All Vehicles:

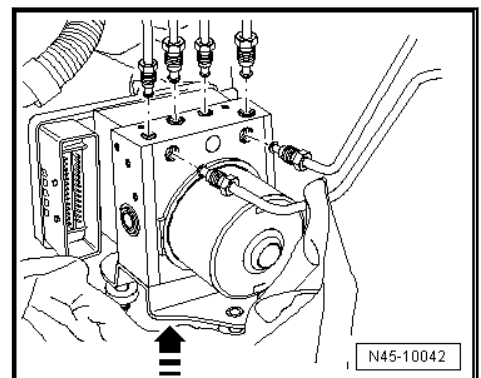
- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make sure no brake fluid gets on the contacts.

- Mark brake lines -A- and -B- from brake master cylinder.



- Remove the brake lines -A- and -B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Mark brake lines -1- to -4-, unscrew and seal.
- Remove the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- in -direction of arrow- and pull upward out of the shock absorbers.



- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.



Installing

Install in reverse order of removal. Note the following:



Note

- ♦ Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.
- ♦ Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.



WARNING

When installing, make sure the damper rubber is not pushed out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ [S6 system](#), page 457.

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ♦ [Chassis](#)
- ♦ [Brake System](#)
- ♦ [Anti-lock braking system ABS/ASR Mark 70](#)
- ♦ [Function](#)
- ♦ [Code ABS Control Module J104](#)

Tightening Specifications

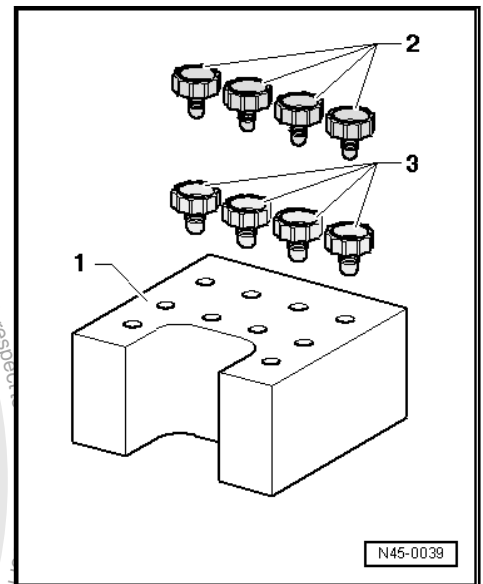
- ♦ Refer to ⇒ [-4.1 Control Module and Hydraulic Unit](#), page 39
- ♦ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ♦ Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing or ⇒ Rep. Gr. 15; Cylinder Head; Engine Cover, Removing and Installing.

4.2.5 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, with 5-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm -VAG1331-
- ♦ Torque Wrench 1410 -VAG1410-
- ♦ Brake Pedal Actuator -VAG1869/2-.
- ♦ Hose Clip Pliers -VAS6340-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

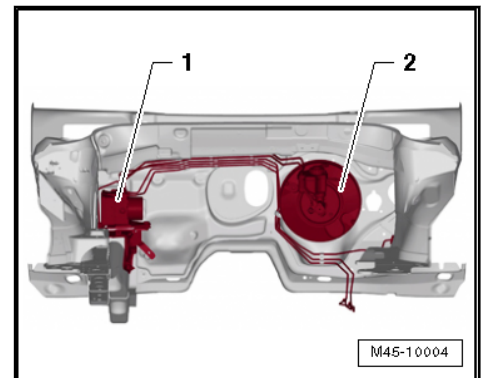
1 - Transportation Protection for Valve Body (Foam)

2 - M10 Plugs

3 - M12 Plugs

Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!



- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

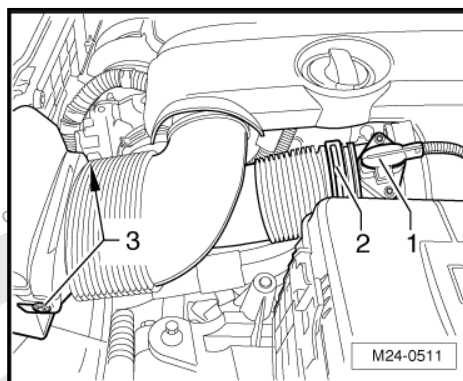


Caution

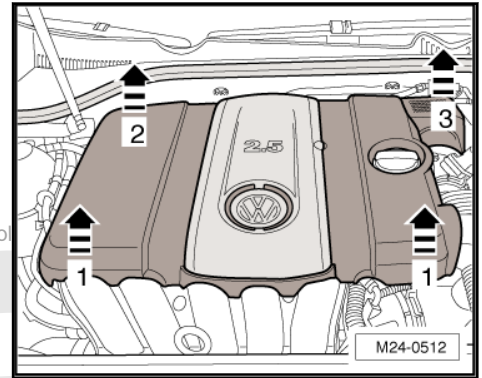
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ Follow the steps for disconnecting the battery.

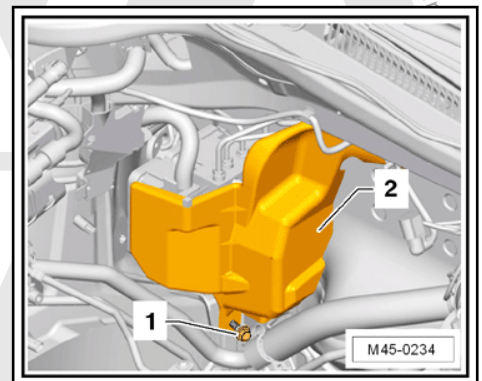
- Open clamp -2- and disconnect intake hose.



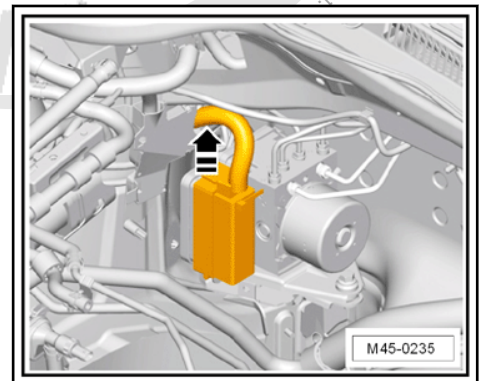
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.
- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



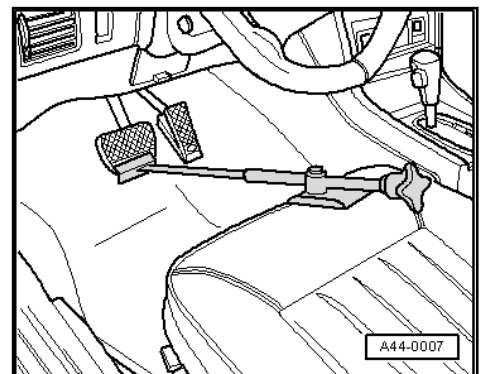
- Carefully swivel engine cover out of rear area.
- If equipped, remove the nut -1- and remove the heat shield -2-.



- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.

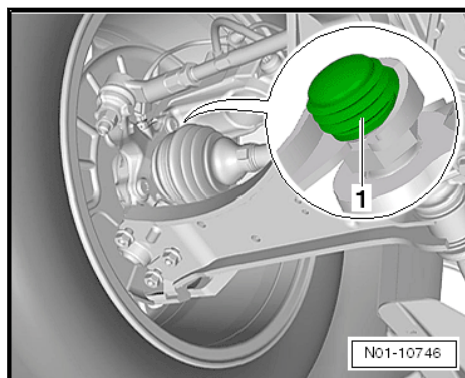


- Insert the Brake Pedal Actuator -VAG1869/2-.

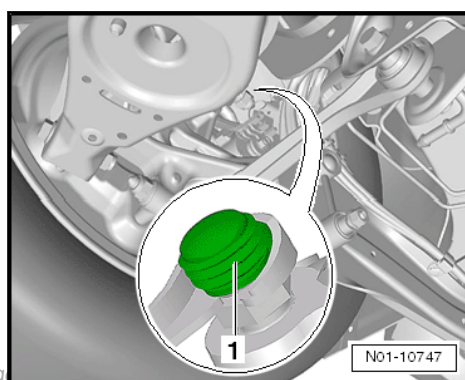




- Remove front left caps -1-.

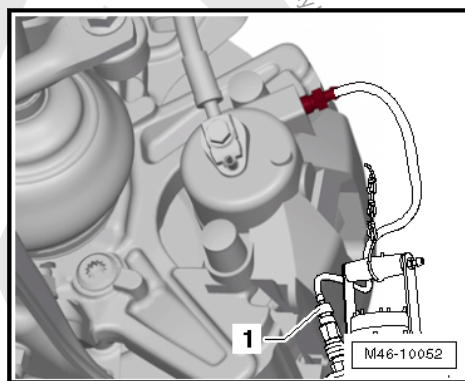


- Remove rear left caps -1-.

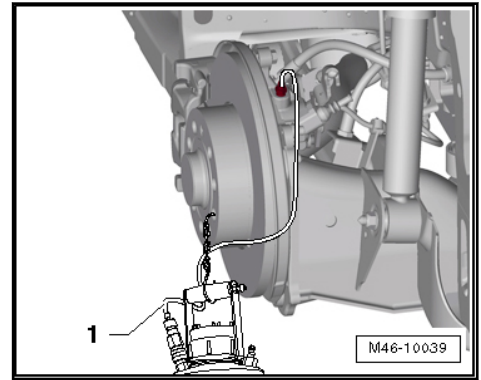


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the left rear brake caliper breather valve.



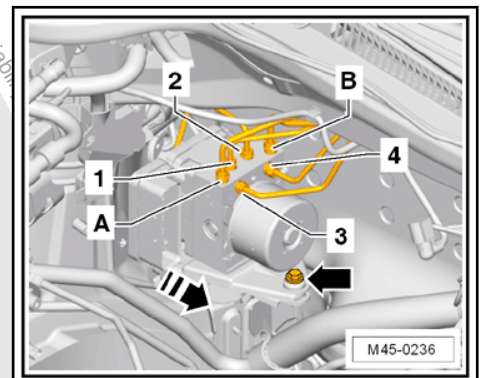
- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.

- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make Sure No Brake Fluid Gets on the Contacts.

- First label both brake lines from the brake master cylinder -A and B-.



Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.

- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Label brake lines -1 through 4- and then remove them.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Remove the hex fitting bolt from the bracket -arrow-.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- and the bracket sideways in direction of -arrow- from the rubber bushings on the bracket.
- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 15- ➔ **Item 15 (page 43)** from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.



Installing

Install in reverse order of removal. Note the following:



Note

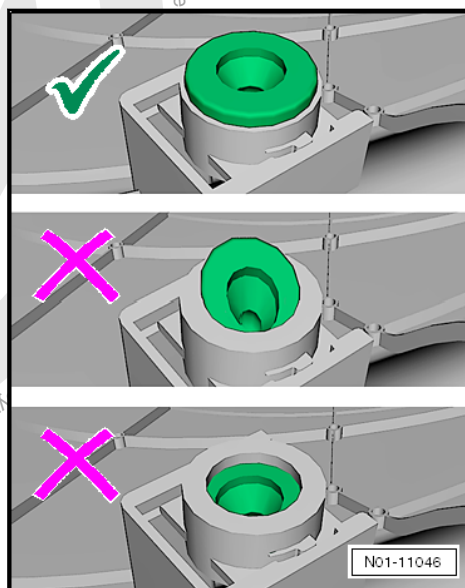
- ◆ Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.
- ◆ Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.



WARNING

When installing the bracket, make sure the rubber bushing does not push out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

- Connect the battery. Refer to ➔ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ➔ [S6 system", page 457](#) .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 - G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.



Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Code ABS Control Module J104

Tightening Specifications

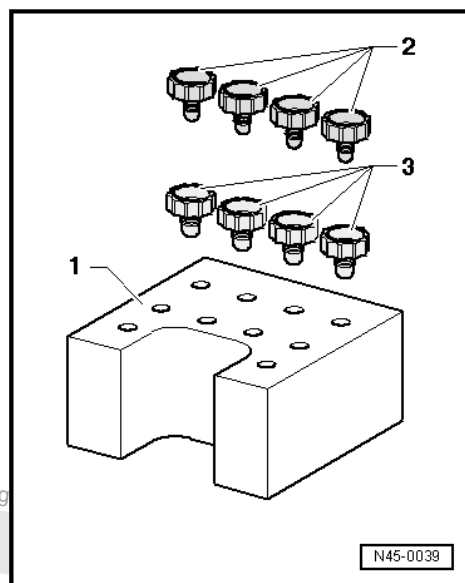
- ◆ Refer to ➔ [-4.1 Control Module and Hydraulic Unit](#), page 39
- ◆ Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➔ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing or ➔ Rep. Gr. 15; Cylinder Head; Engine Cover, Removing and Installing.

4.2.6 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-.

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

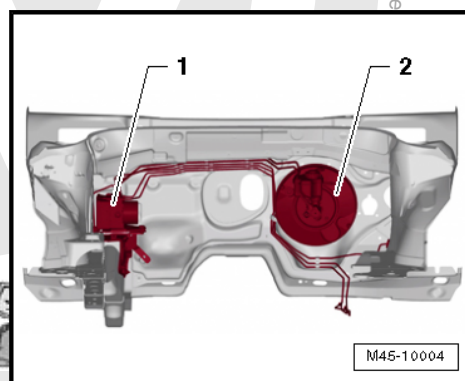
1 - Transportation Protection for Valve Body (Foam)

2 - M10 Plugs

3 - M12 Plugs

Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

Use the Vehicle Diagnostic Tester.



- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60
EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

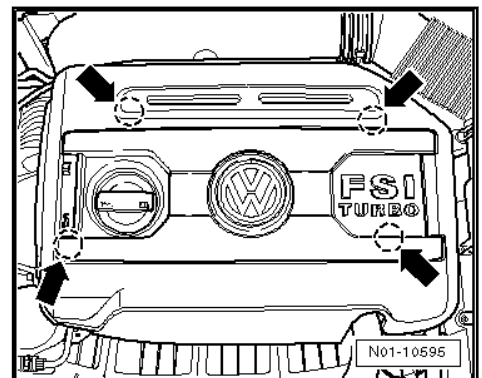


Caution

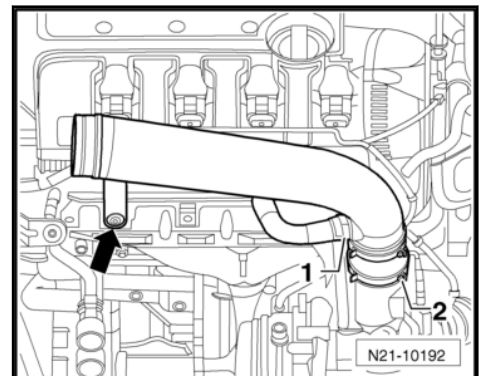
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

Vehicles with 2.0L Gasoline Engine and Turbocharger



- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Open the clamp and remove the air guide hose from the air filter. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- Press the release button to remove the air duct hose -1-.

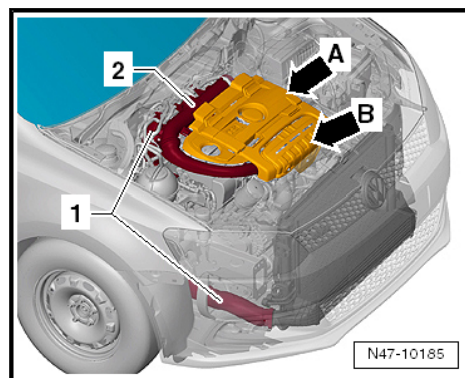


- Remove the air duct hose -1- and move it to the side.



- Remove the air duct pipe bolt -arrow-.
- Remove the air duct pipe; to do this, loosen the hose clamp -2-.
- Remove the intake hose between the intermediate pipe and the turbocharger.
- Seal the turbocharger with the Engine Bung Set -VAS6122-.

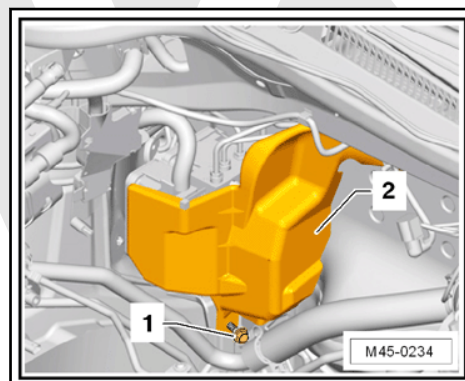
Vehicles with 1.4L Gasoline Engine, Turbocharger and Compressor:



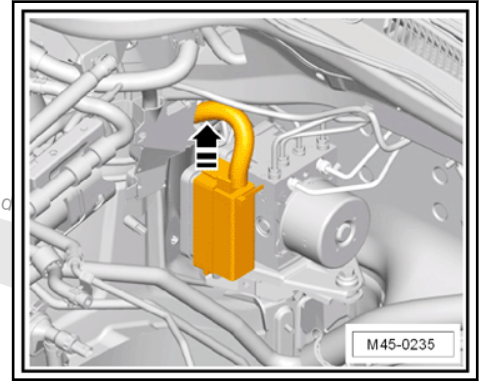
- Remove the engine cover -arrow A- and the heat shield -arrow B-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Remove the pressure pipe with the regulating flap control unit -2-. Refer to ⇒ Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.
- Remove the charge air pipe -1-. Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components.

Continuation for All Vehicles

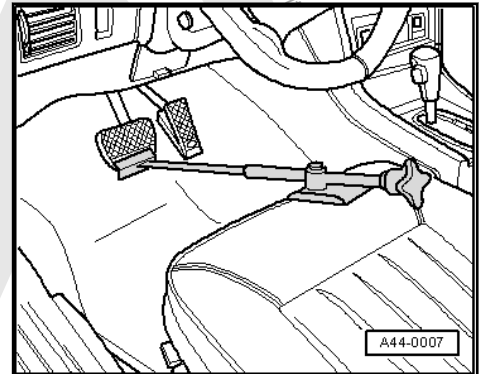
- If equipped, remove the nut -1- and remove the heat shield -2-.



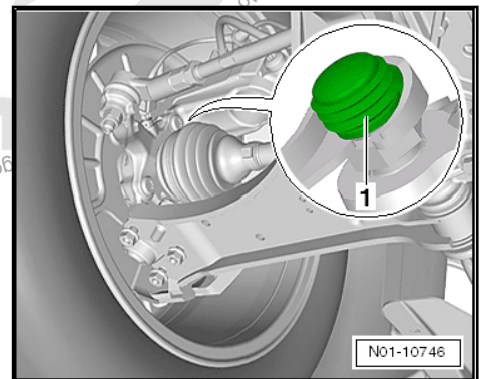
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.



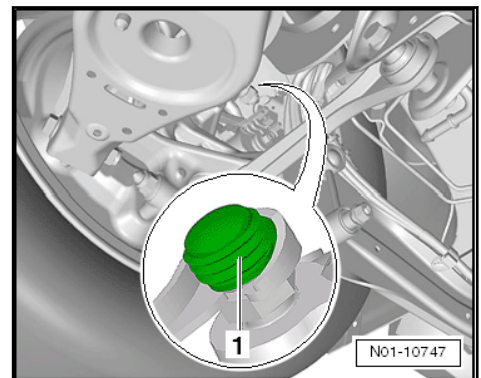
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.



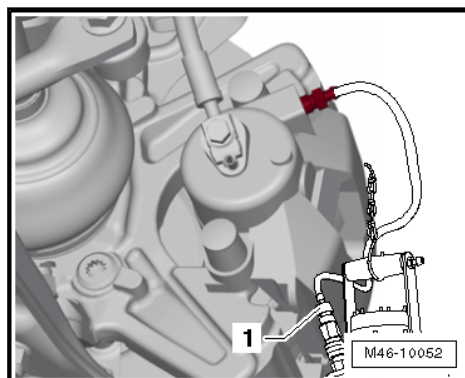
- Remove rear left caps -1-.



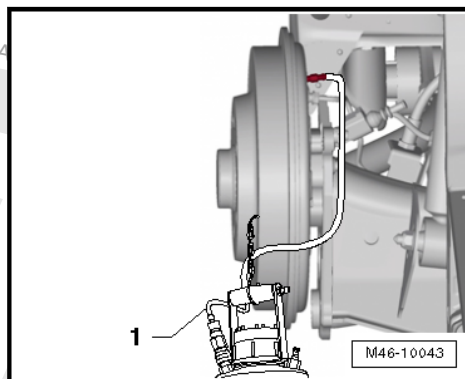


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.



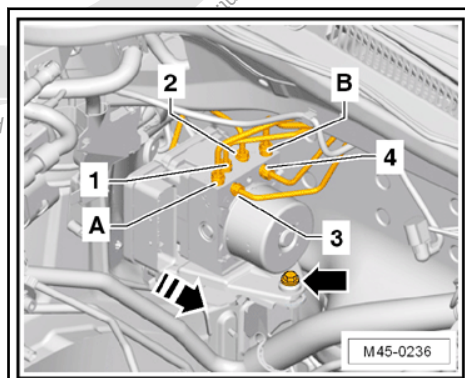
- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.

- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make Sure No Brake Fluid Gets on the Contacts.

- First label both brake lines from the brake master cylinder -A and B-.





- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Label brake lines -1 through 4- and then remove them.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Remove the hex fitting bolt from the bracket -arrow-.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- and the bracket sideways in direction of -arrow- from the rubber bushings on the bracket.
- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 15- ➔ [Item 15 \(page 43\)](#) from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.*
- ◆ *Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.*

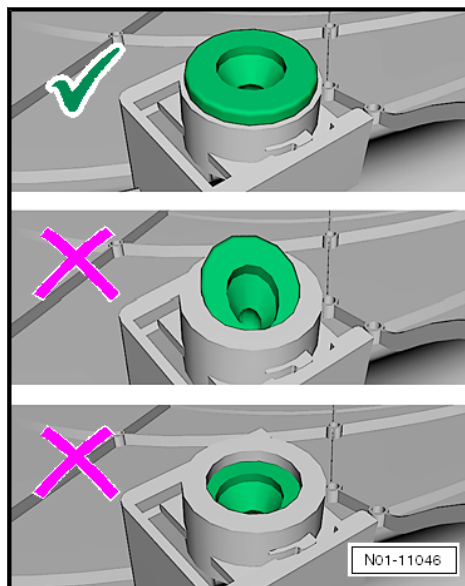


WARNING

When installing the bracket, make sure the rubber bushing does not push out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.





Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ [S6 system](#)”, page 457 .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 -G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Code ABS Control Module J104



Tightening Specifications

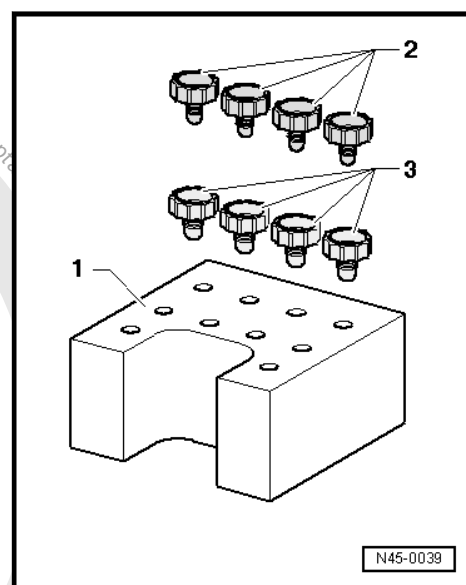
- ◆ Refer to ➔ [-4.1 Control Module and Hydraulic Unit”, page 39](#)
- ◆ Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➔ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- ◆ Refer to ➔ Rep. Gr. 21; Turbocharger; Overview - Turbocharger.
- ◆ Refer to ➔ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components.

4.2.7 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing with 4-Cylinder Diesel Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-
- ◆ Ring Wrench 7-Piece Set -3337-
- ◆ Wrench - Sw13 -T10384-
- ◆ Hydraulic Press - Subframe Assembly Tools -T10365-
- ◆ Transportation Lock -T10404-
- ◆ Engine Bung Set -VAS6122-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

1 - Transportation Protection for Valve Body (Foam)

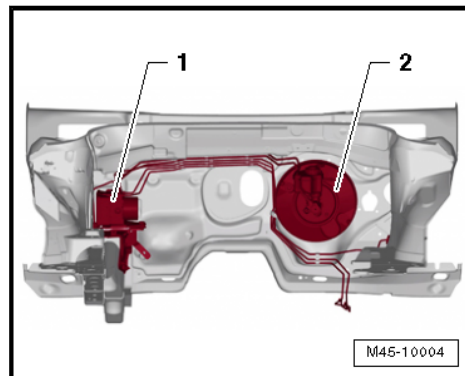


2 - M10 Plugs

3 - M12 Plugs

Perform the Following:

Removing



Component Location:

The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

- 1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-
- 2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.



Caution

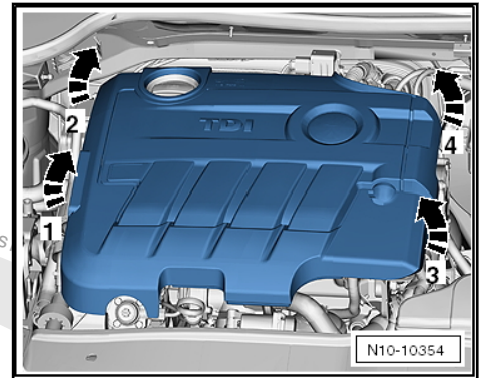
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

- Remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 50; Noise Insulation.



- Remove engine cover in direction of -arrows-.



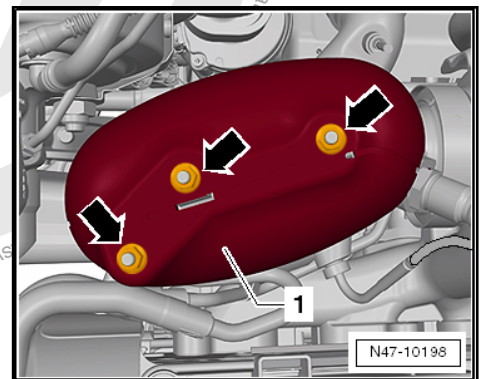
- Observe the given sequence in direction of -arrows 1 through 4-.
- Reach as far as possible under the engine cover.



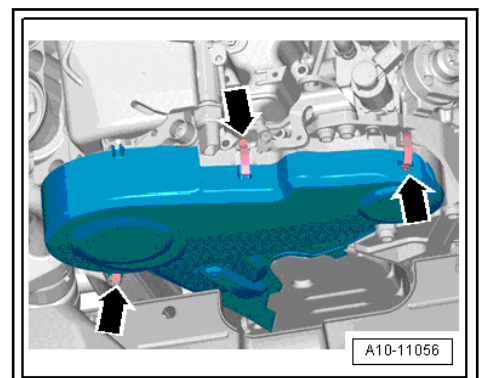
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always follow these steps to remove the engine cover.

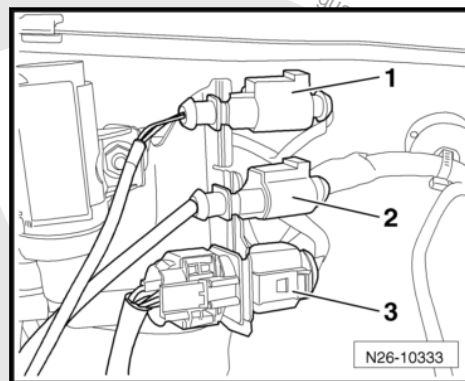
- Remove the nuts -arrows- and then remove the heat shield -1- from the diesel particulate filter.



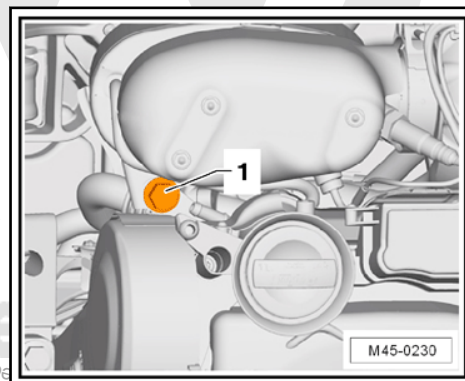
- Open the clips -arrows- and remove the upper toothed belt cover.



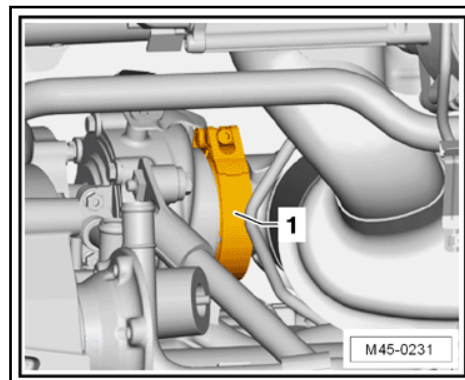
- Release and remove connectors -1 through 3-.



- Remove the particulate filter bracket bolts -1-.



- Loosen the clamps and remove the hoses from the particulate filter. Refer to ⇒ Rep. Gr. 26; Exhaust System.
- Raise the vehicle.
- Loosen the clamp -1- for the turbocharger/particulate filter connection and remove it.



Note

The illustration shows the clamp bolt -1- from underneath. This can also be installed from above in some cases.

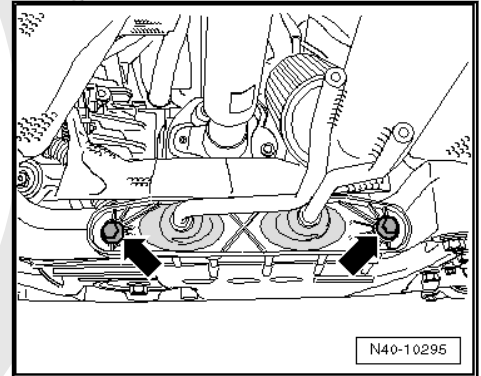
Vehicles with Absorption Catalytic Converter

- Disconnect the exhaust system between the particulate filter and the absorption catalytic converter. Refer to ⇒ Rep. Gr. 26; Exhaust System.
- Disconnect the exhaust system after the absorption catalytic converter. Refer to ⇒ Rep. Gr. 26; Exhaust System.

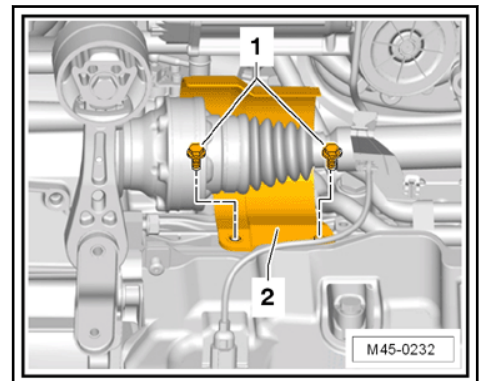


Continuation for All Vehicles

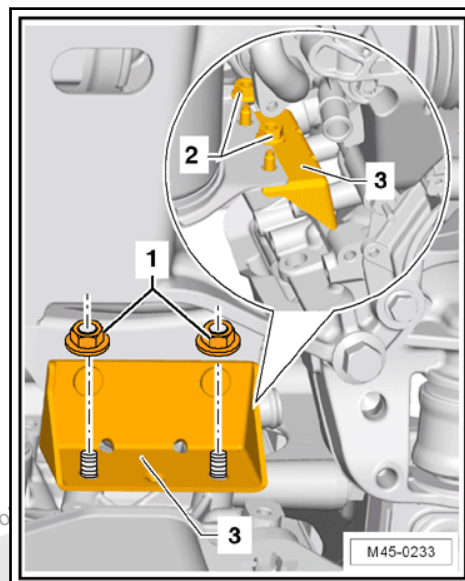
- If equipped, remove the EGR pipe from the particulate filter. Refer to ➤ Rep. Gr. 26; Exhaust System.
- Disconnect the exhaust system. Refer to ➤ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Muffler.
- Remove the exhaust system bracket from the subframe -arrows-.



- Remove the bolts -1- and remove the drive shaft cover -2-.



- Remove the right drive axle from the flange, lay it down and secure it. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axles, Removing and Installing.
- Remove the nuts -1-.
- Remove the nuts -2- using the Wrench - Sw13 -T10384-.
- Remove bracket for particulate filter -3-.



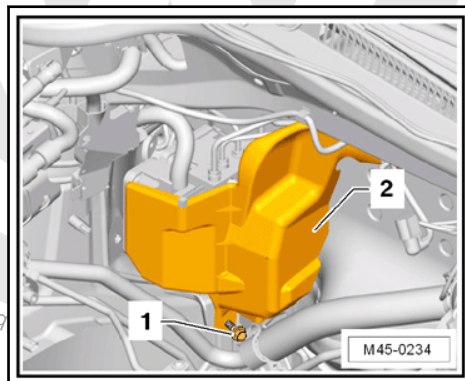
- Seal all openings using the Engine Bung Set -VAS6122-.
- Lower the particulate filter just enough so that it touches the steering gear.



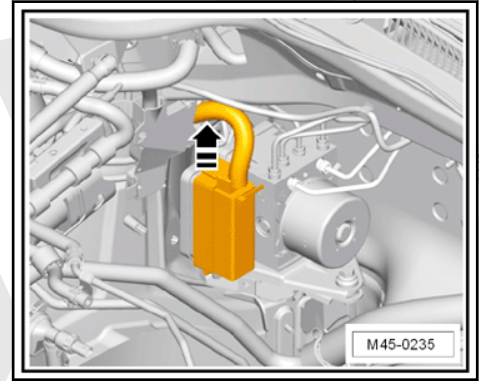
Note

Pay attention to the Exhaust Gas Temperature Sensor 1 -G235- and the Heated Oxygen Sensor -G39- when lowering onto the cables in order to avoid any damage.

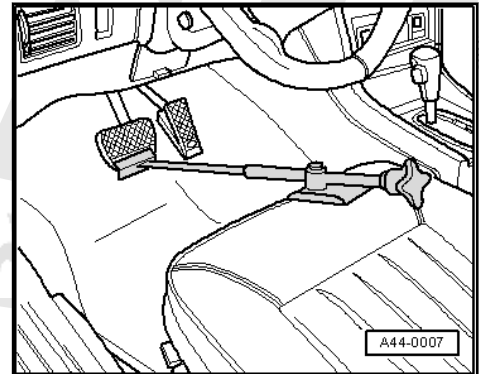
- If equipped, remove the nut -1- and remove the heat shield -2-.



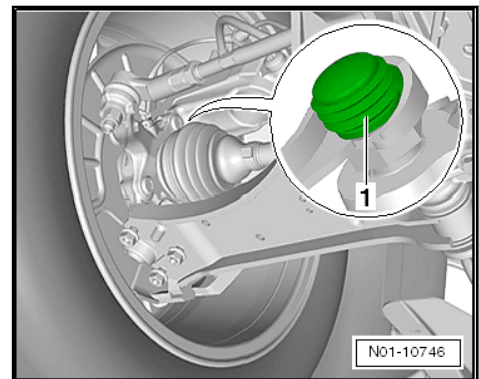
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.



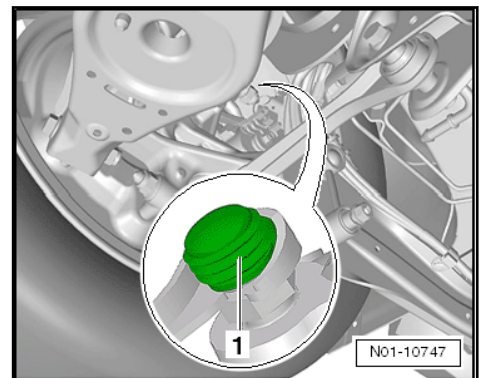
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.



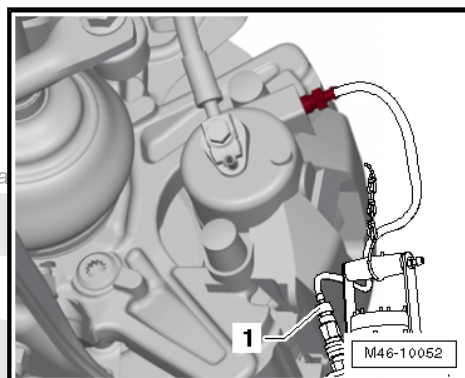
- Remove rear left caps -1-.



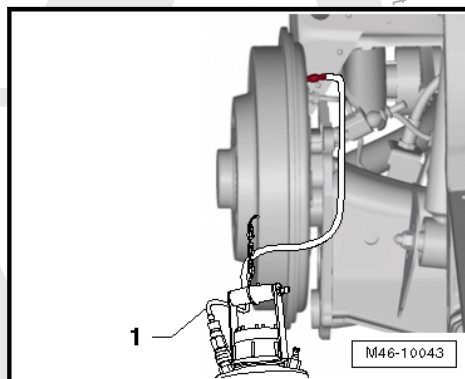


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.



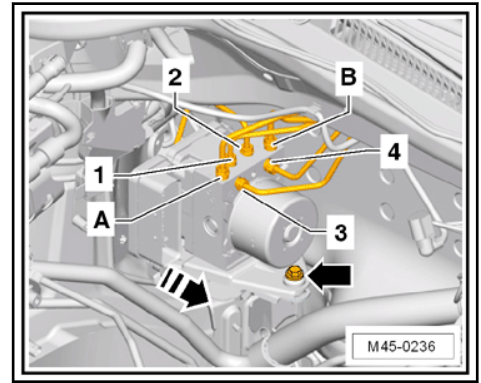
- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.

- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make Sure No Brake Fluid Gets on the Contacts.

- First label both brake lines from the brake master cylinder -A and B-.
- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Label brake lines -1 through 4- and then remove them.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Remove the hex fitting bolt from the bracket -arrow-.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- and the bracket sideways in direction of -arrow- from the rubber bushings on the bracket.



- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 15- ➔ [Item 15 \(page 43\)](#) from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

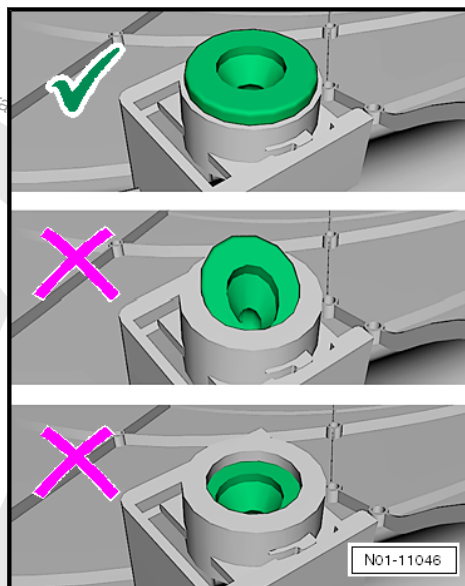
- ◆ Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.
- ◆ Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.



WARNING

When installing the bracket, make sure the rubber bushing does not push out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

- Connect the battery. Refer to → Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ [S6 system](#)”, page 457 .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 - G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Code ABS Control Module J104



Tightening Specifications

- ◆ Refer to ➤ [-4.1 Control Module and Hydraulic Unit”, page 39](#)
- ◆ Air filter. Refer to ➤ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.
- ◆ Drive Axles. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axles, Removing and Installing.
- ◆ Exhaust system. Refer to ➤ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Muffler.
- ◆ Emissions control. Refer to ➤ Rep. Gr. 26; Exhaust System.

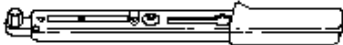


4.2.8 ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, RHD with ABS Mark 60 EC ABS/EDL/ASR/ESP

NOT FOR NORTH AMERICAN MARKET

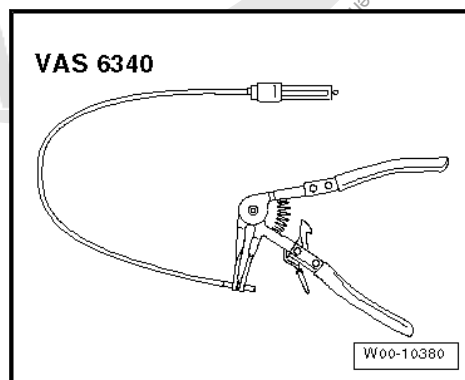




**Special tools and workshop
equipment required**

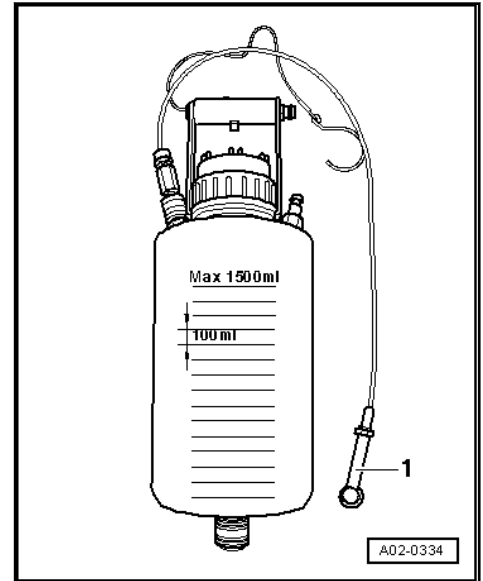
V.A.G 1331 	V.A.G 1410 
V.A.G 1869/2 	
	W45-0003

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-
- ◆ Hose Clip Pliers -VAS6340-

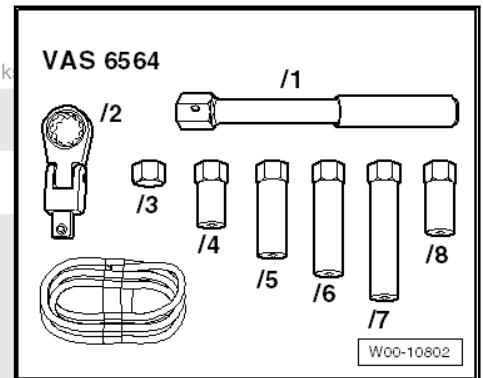




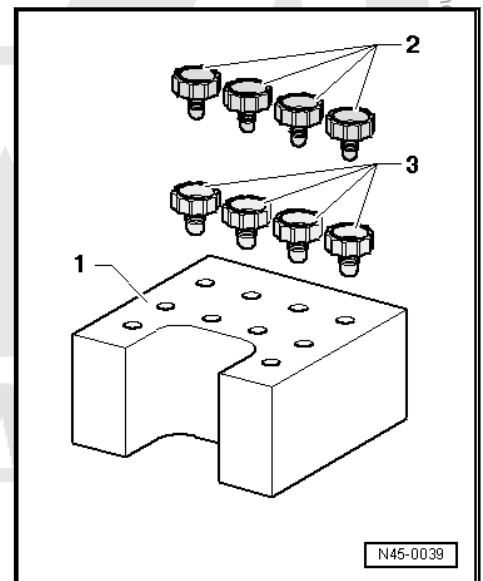
- ◆ Brake Charger/Bleeder Unit - Used Fluid Bottle - CRP1898020-



- ◆ Brake Bleeding Tool Set -VAS6564-



Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

1 - Transportation Protection for Valve Body (Foam)



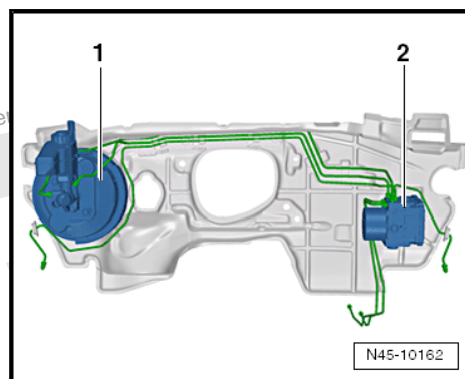
2 - M10 Plugs

3 - M12 Plugs

Perform the following:

Removing

Installation location:



- 1 - Brake Booster with Tandem Brake Master Cylinder
- 2 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-



Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use Vehicle Diagnostic Tester

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60
EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

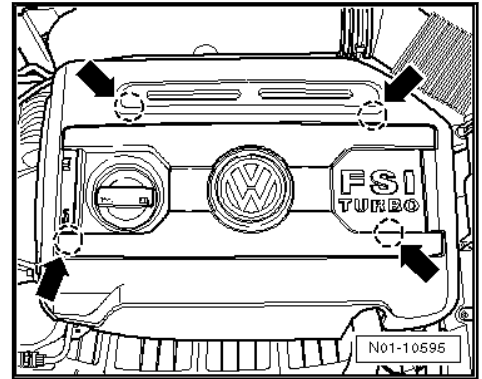


Caution

Danger of causing damage to electronic components when disconnecting the battery.

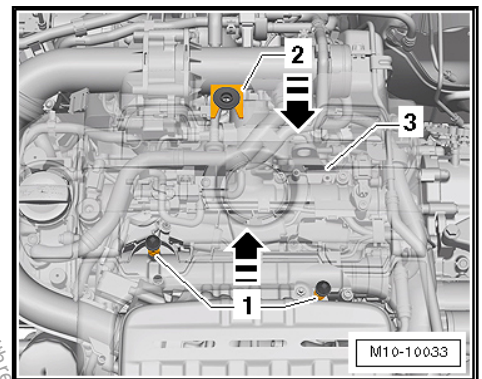
- ◆ *Follow the steps for disconnecting the battery.*

Vehicles with 2.0L gasoline engine and turbocharger



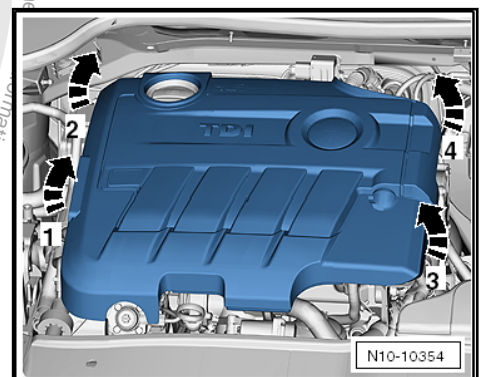
- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

Vehicles with 1.4L gasoline engine, turbocharger and compressor:



- Lift engine cover -3- upward at points -1- in -direction of arrow-.
- Pull cover out of bracket -2- in -direction of arrow-.

Vehicles with Diesel Engine:

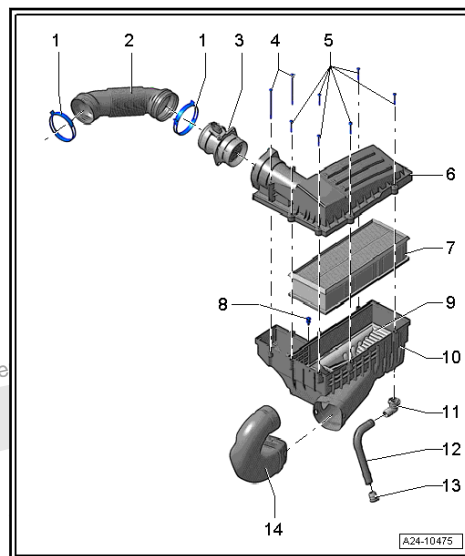


- Remove engine cover near -arrows-.

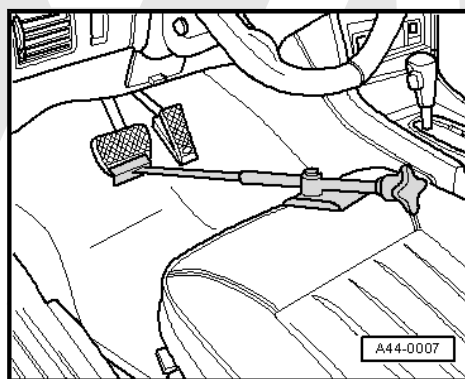


- Pay attention to the sequence given -1- to -4-. Refer to
⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and
Installing.
- Reach as far as possible under the engine cover.

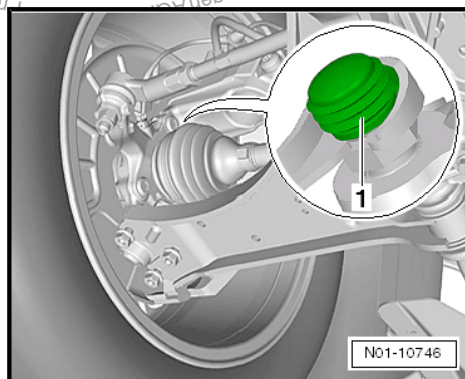
Continuation for All Vehicles:



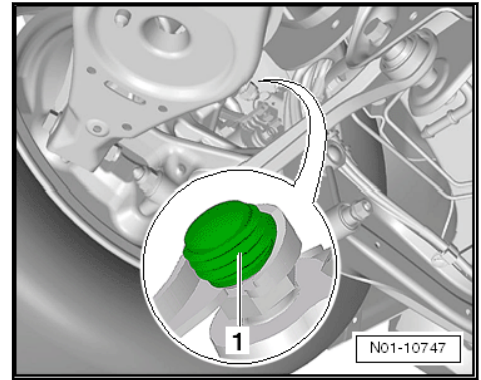
- If necessary, remove the intake hose -2-. Refer to ⇒ Rep.
Gr. 24; Air Filter; Overview - Air Filter Housing.
- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Remove front left caps -1-.

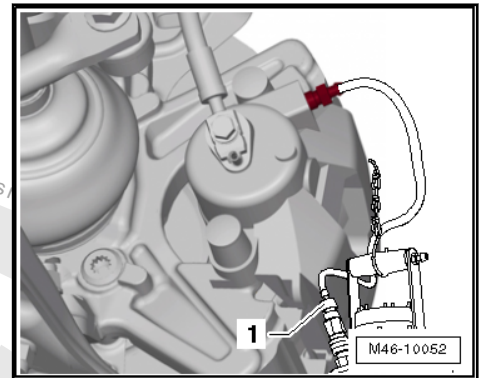


- Remove rear left caps -1-.

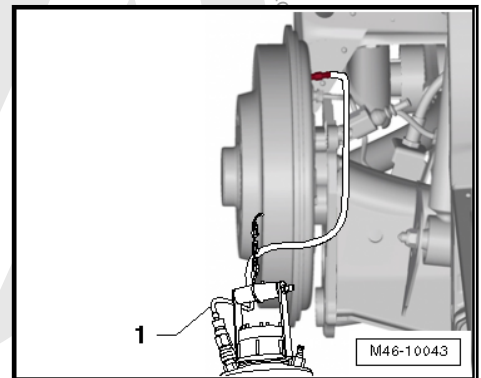


Use a suitable bleeder hose. It must fit tightly on the breather valve so that no air can get into the brake system.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.

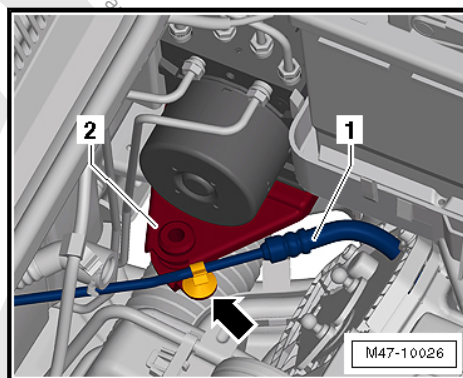


- Open the breather valve.
- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.



Vehicles with Manual Transmission:



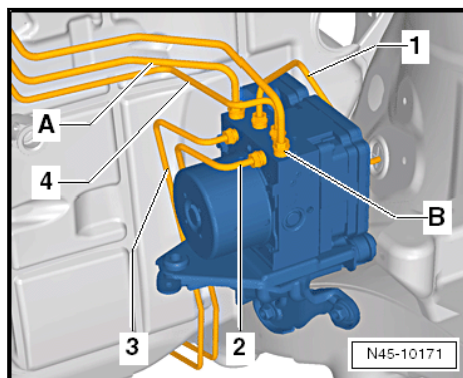
- Unclip hydraulic line -1- on bracket -2- -arrows-.

Continuation for All Vehicles:

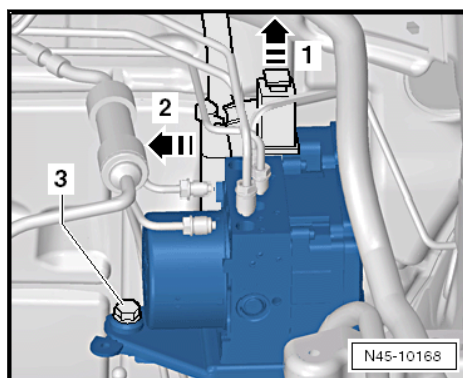
- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make sure no brake fluid gets on the contacts.

- First label both brake lines from the brake master cylinder -A- and -B-.



- Remove the brake lines -A- and -B- from the ABS Hydraulic Unit -N55-.
- Seal brake lines and threaded holes immediately with Sealing Plugs from the Repair Kit -1H0.698.311.A-.
- Label brake lines -1- through -4- and then remove them.
- Seal brake lines and threaded holes with Sealing Plugs from the Repair Kit -1H0.698.311.A-.
- Disconnect the connector from ABS Control Module -J104- in -direction of arrow 1-.





- Remove connector in -direction of arrow 2-.
- Remove the hex bolt -3- from the bracket.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- and the bracket from the rubber bushings in the bracket.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.*
- ◆ *Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.*



WARNING

When installing, make sure the damper rubber is not pushed out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ⇒ **S6 system**, page 457 .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 - G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Use Vehicle Diagnostic Tester

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

If a new ABS Control Module -J104- was installed, it must be coded.

Use Vehicle Diagnostic Tester

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Code ABS Control Module J104



Tightening Specifications

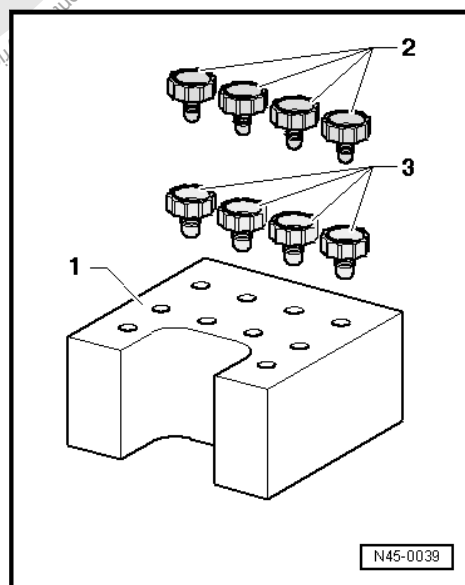
- ◆ Refer to ➔ **-4.1 Control Module and Hydraulic Unit-**, page 39
- ◆ Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➔ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing or ➔ Rep. Gr. 15; Cylinder Head; Engine Cover, Removing and Installing.

4.2.9 **ABS Control Module -J104- and ABS Hydraulic Unit -N55-, Removing and Installing, Hybrid and ABS Mark 60 EC ABS/EDL/ASR/ESP**

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1410 -VAG1410-
- ◆ Brake Pedal Actuator -VAG1869/2-
- ◆ Brake Charger/Bleeder Unit - Used Fluid Bottle - CRP1898020-
- ◆ Brake Bleeding Tool Set -VAS6564-

Plugs -1H0 698 311 A-



Install the transportation protection after removing the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if there is no transportation protection.

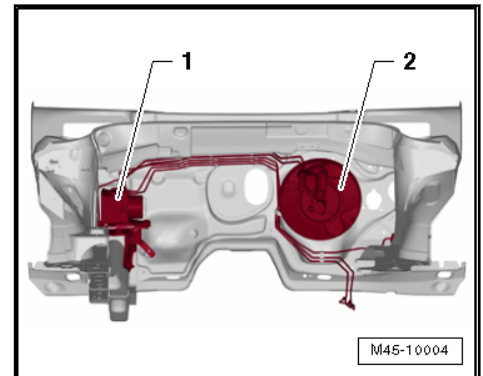
- 1 - Transportation Protection for Valve Body (Foam)
- 2 - M10 Plugs
- 3 - M12 Plugs



Perform the Following:

Removing

Component Location:



The ABS Control Module -J104- is attached to the ABS Hydraulic Unit -N55- and is located inside the engine compartment on the right side.

- 1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-
- 2 - Brake Booster with Tandem Brake Master Cylinder



WARNING

Do not bend the brake lines near the ABS Hydraulic Unit -N55-!

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Check ABS control module J104 coding



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.



Caution

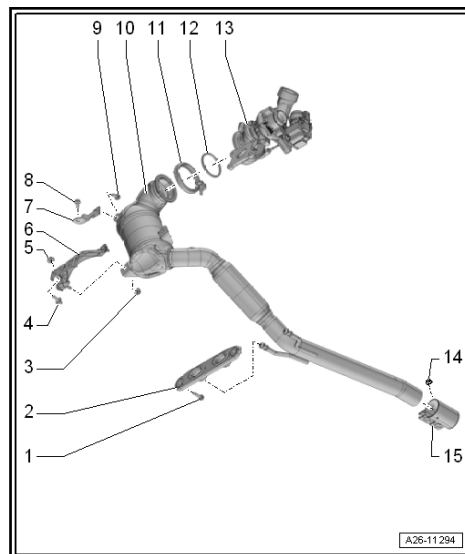
Danger of causing damage to electronic components when disconnecting the battery.

- ◆ Follow the steps for disconnecting the battery.

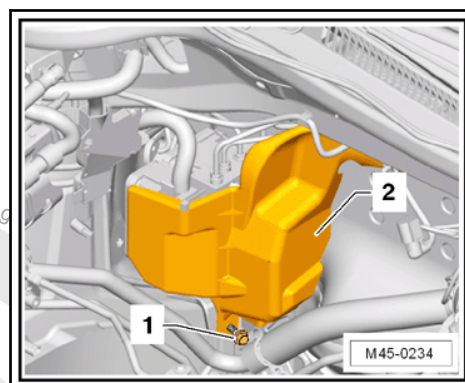
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.



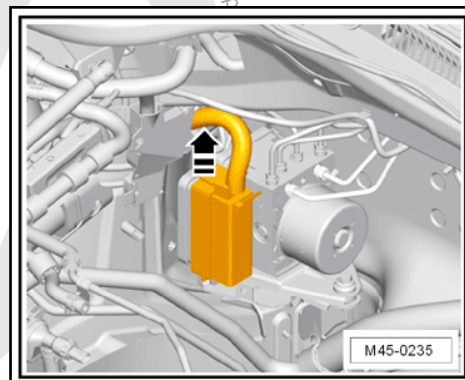
- Remove the catalytic converter -1-. Refer to ⇒ Rep. Gr. 26; Emissions Control; Catalytic Converter, Removing and Installing.



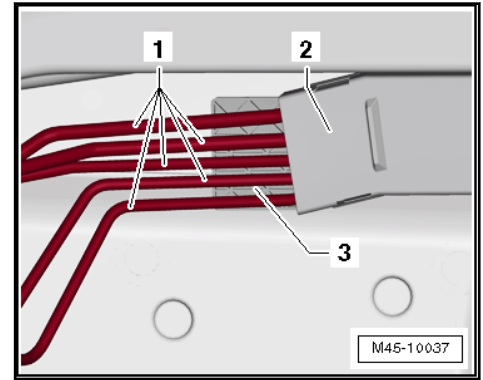
- If equipped, remove the nut -1- and remove the heat shield -2-.



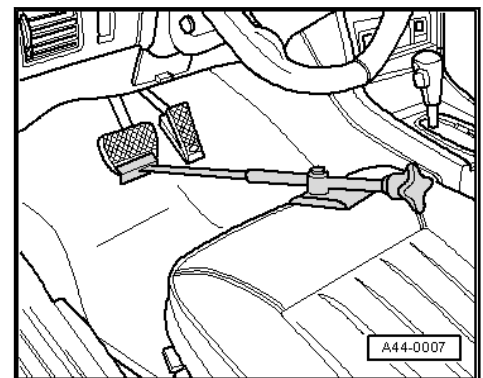
- Disconnect and remove the connector from the ABS Control Module -J104- in direction of -arrow-.



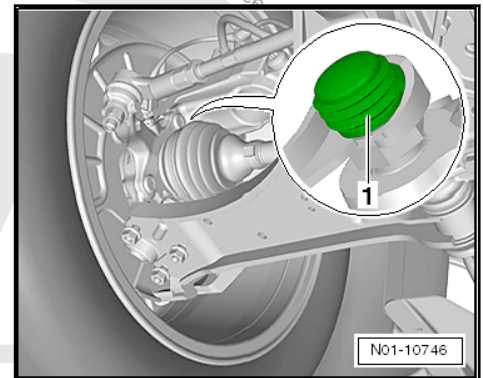
- Unclip the cover -2-.



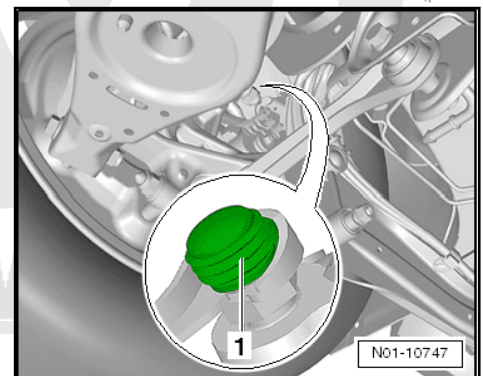
- Unclip the brake lines -1- on the bracket -3-.
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Push the brake pedal at least 60 mm using the Brake Pedal Actuator -VAG1869/2-.
- Remove front left caps -1-.



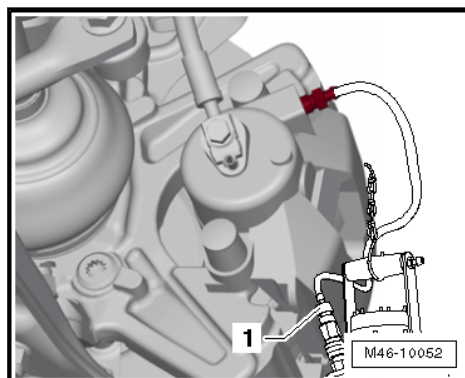
- Remove rear left caps -1-.



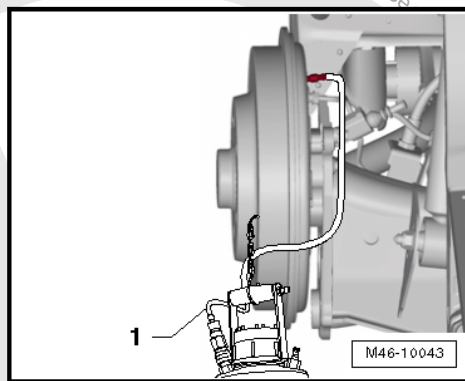


Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

- Attach the bleeder bottle bleed hose -1- to the left front brake caliper breather valve.



- Open the breather valve.
- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve/left rear brake cylinder.



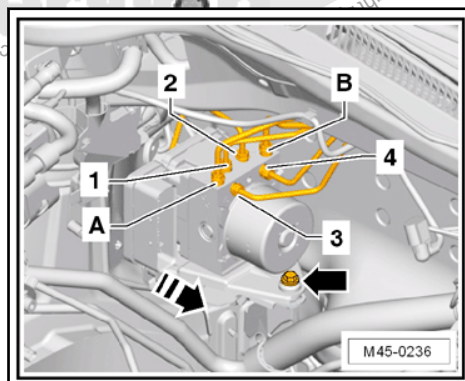
- Open the breather valve.
- Close the left front and left rear breather valves.

Do not remove the Brake Pedal Actuator -VAG1869/2-.

- Place enough lint-free cloths under the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Make Sure No Brake Fluid Gets on the Contacts.

- First label both brake lines from the brake master cylinder -A and B-.



- Remove the brake lines -A and B- from the ABS Hydraulic Unit -N55-.



- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Label brake lines -1 through 4- and then remove them.
- Seal the brake lines and threaded holes immediately using Plugs -1H0 698 311 A-.
- Remove the hex fitting bolt from the bracket -arrow-.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- and the bracket sideways in direction of -arrow- from the rubber bushings on the bracket.
- Turn the ABS Hydraulic Unit -N55- with the ABS Control Module -J104- upside down.
- Unscrew and remove the bracket -item 15- ➔ **Item 15 (page 43)** from the ABS Hydraulic Unit -N55- inside the engine compartment.
- Remove the ABS Hydraulic Unit -N55- with the ABS Control Module -J104-.

Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *Remove the plugs on the new ABS Hydraulic Unit -N55- only when installing the corresponding brake line.*
- ◆ *Brake fluid may leak out if the plugs are removed from the ABS Hydraulic Unit -N55- beforehand and the unit may not be sufficiently filled or adequately bled.*



WARNING

When installing the bracket, make sure the rubber bushing does not push out of the bracket. Make sure the ABS Hydraulic Unit -N55- is secure after installing it otherwise malfunctions can occur.

- Thread the brake lines onto the ABS Hydraulic Unit -N55-.
- Clip the brake lines into the bracket and tighten.
- Connect the battery. Refer to ➔ **Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.**
- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to ➔ **S6 ystem", page 457** .

Perform a basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 - G201- after installing the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Use the Vehicle Diagnostic Tester.

- ◆ **Chassis**
- ◆ **Brake System**
- ◆ **Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC**
- ◆ **Function**



- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Code ABS Control Module J104

Tightening Specifications

- ◆ Refer to ⇒ [4.1.2 ABS Mark 60 EC \(ABS/EDL/ASR/ESP\)", page 41](#)
- ◆ Breather valves. Refer to ⇒ [B1 rake Caliper", page 285](#)
- ◆ Rear breather valves. Refer to ⇒ [B2 rake Caliper", page 294](#)
- ◆ Catalytic converter. Refer to ⇒ Rep. Gr. 26; Exhaust System.
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.

4.3 Control Module, Separating from Hydraulic Unit

⇒ [A4.3.1 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)", page 120](#)

⇒ [A4.3.2 BS Control Module J104, Separating from ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\)", page 122](#)

4.3.1 ABS Control Module -J104-, Separating from ABS Hydraulic Unit -N55- (Mark 70 ABS/ASR)

Perform the Following:

Removing

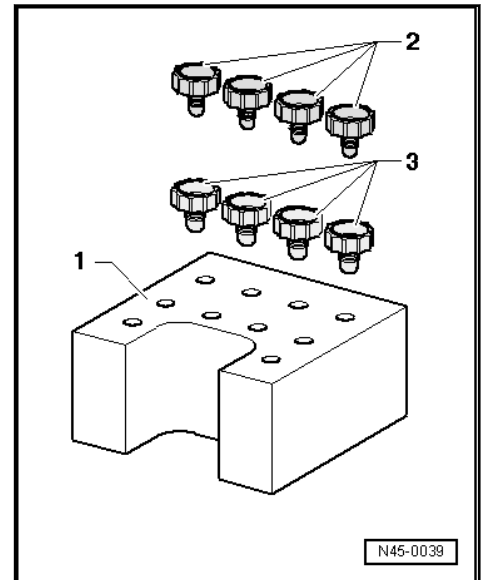
- Retrieve the coding from the ABS Control Module -J104- and write it down.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Check ABS control module J104 coding

Remove the ABS Hydraulic Unit -N55- together with the ABS Control Module -J104-. Refer to ⇒ [A4.2.2 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 70 ABS/ASR", page 54](#)

Plugs -1H0 698 311 A-



Install the transportation protection for the valve domes on the ABS Hydraulic Unit -N55- after separating the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if the transportation protection is missing.

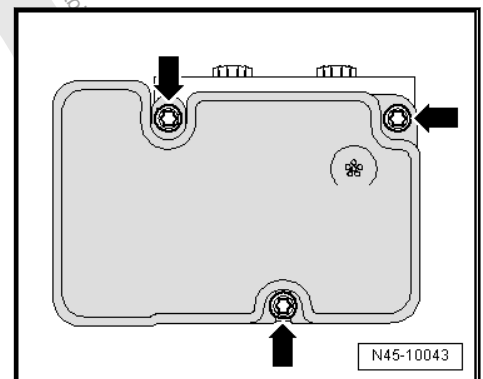
1 - Transportation Protection for Valve Body (Foam)

2 - M10 Plug

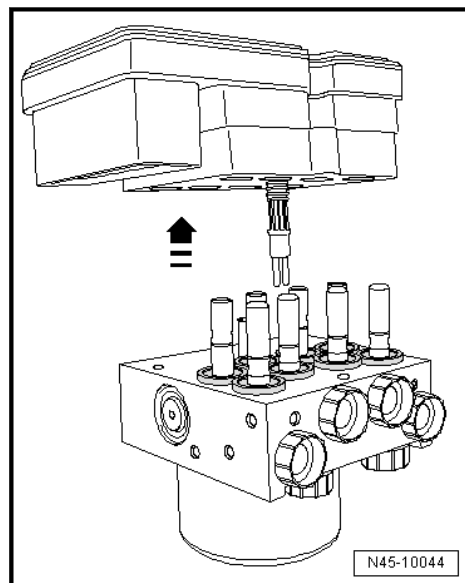
3 - M12 Plug

– Place the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- on a clean level surface facing upward.

– Remove the bolts -arrows-.



– Remove the ABS Control Module -J104- from the ABS Hydraulic Unit -N55- in the direction of -arrow- without tilting it.



- Carefully remove all the seals from the valve domes on the ABS Hydraulic Unit -N55-.



WARNING

- ◆ *The circuit board is exposed when the ABS Control Module -J104- is removed.*
- ◆ *No moisture and dirt particles may get into the ABS Control Module -J104-.*
- ◆ *The pump must not be separated from the ABS Hydraulic Unit -N55-.*
- ◆ *Avoid electrostatic charge!*

- Cover the solenoid coils of the ABS Control Module -J104- with a lint-free cloth.

Use the valve body transportation protection after disconnecting the ABS Control Module -J104- and the ABS Hydraulic Unit -N55-.

Installing. Refer to ➤ [A4.4.1 BS Control Module J104, Attaching to ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)](#), page 124 .

4.3.2 ABS Control Module -J104-, Separating from ABS Hydraulic Unit -N55- (ABS Mark 60 EC ABS/EDL/ASR/ESP)

Perform the Following:

Removing

- Retrieve the coding from the ABS Control Module -J104- and write it down.

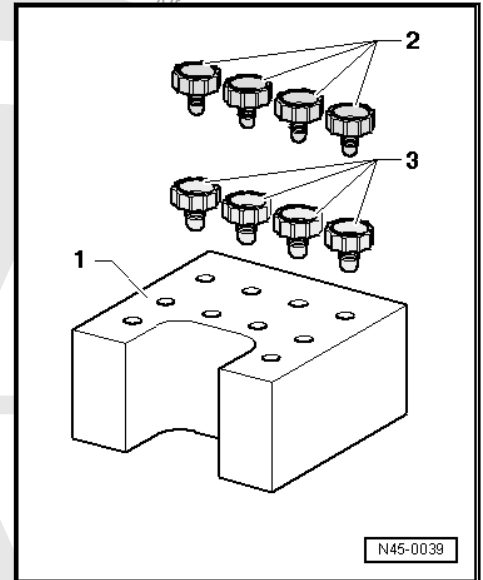
Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function

◆ Check ABS control module J104 coding

Remove the ABS Hydraulic Unit -N55- together with the ABS Control Module -J104-. Refer to ➔ [A4.2.6 BS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP](#), page 87.

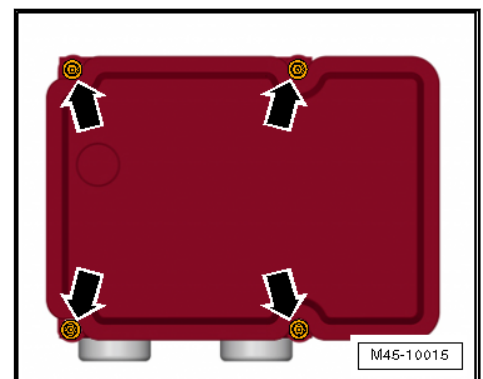
Plugs -1H0 698 311 A-



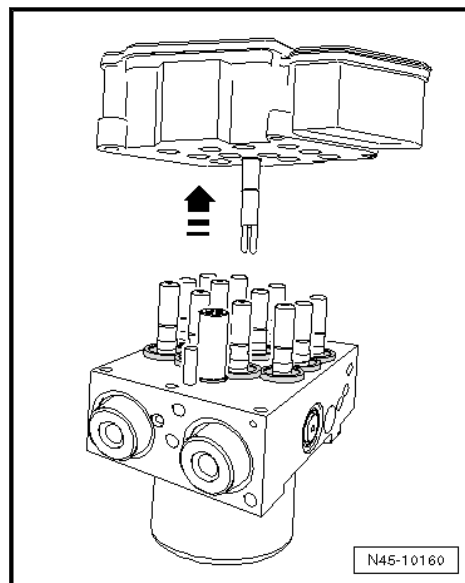
Install the transportation protection for the valve domes on the ABS Hydraulic Unit -N55- after separating the ABS Control Module -J104- from the ABS Hydraulic Unit -N55-.

The warranty on the ABS Hydraulic Unit -N55- will not be honored if the transportation protection is missing.

- 1 - Transportation Protection for Valve Body (Foam)
- 2 - M10 Plug
- 3 - M12 Plug
- Place the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- on a clean level surface facing upward.
- Remove the bolts -arrows-.



- Remove the ABS Control Module -J104- from the ABS Hydraulic Unit -N55- in the direction of -arrow- without tilting it.



- Carefully remove all the seals from the valve domes on the ABS Hydraulic Unit -N55-.



WARNING

- ◆ *The circuit board is exposed when the ABS Control Module -J104- is removed.*
- ◆ *No moisture and dirt particles may get into the ABS Control Module -J104-.*
- ◆ *Avoid electrostatic charge!*

- Cover the solenoid coils of the ABS Control Module -J104- with a lint-free cloth.

Installing. Refer to [⇒ A4.4.2 BS Control Module J104, Attaching to ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\)](#), page 126 .

4.4 Control Module, Installing on Hydraulic Unit

[⇒ A4.4.1 BS Control Module J104, Attaching to ABS Hydraulic Unit N55 \(Mark 70 ABS/ASR\)](#), page 124

[⇒ A4.4.2 BS Control Module J104, Attaching to ABS Hydraulic Unit N55 \(ABS Mark 60 EC ABS/EDL/ASR/ESP\)](#), page 126

4.4.1 ABS Control Module -J104-, Attaching to ABS Hydraulic Unit -N55- (Mark 70 ABS/ASR)

Installing

Assembly is performed in reverse order. Note the following:



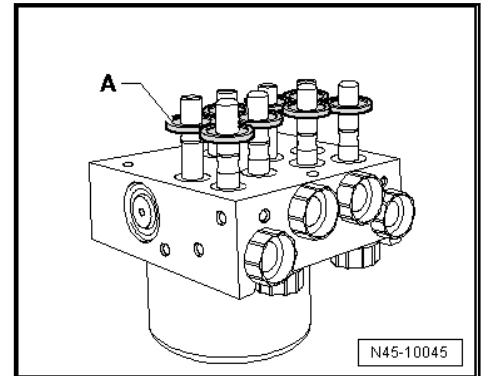
WARNING

Excessive shaking (for example, dropping, impact) can destroy the ABS Control Module -J104-. The ABS Control Module -J104- may no longer be used afterward.

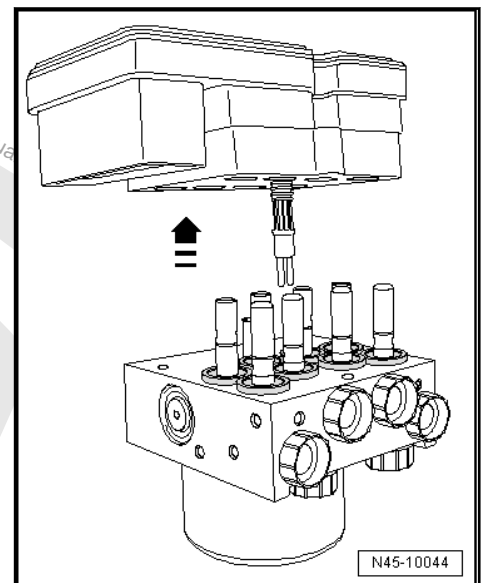


Note

- ◆ A new ABS Control Module -J104- can be installed on an old ABS Hydraulic Unit -N55- maximum twice. This assures the elastic seal will not leak.
- ◆ A used ABS Control Modules -J104- may not be installed a second time.
- Surfaces must be cleaned before assembling.
- Slide all seals -A- slightly over the valve body.

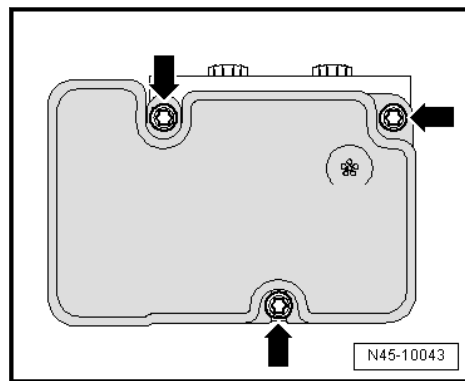


- Place the ABS Control Module -J104- on the ABS Hydraulic Unit -N55- without tilting it.



Seals are then brought into their end position.

- Install the ABS Hydraulic Unit -N55- and ABS Control Module -J104- with the new bolts -arrows- provided.



If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/ASR Mark 70
- ◆ Function
- ◆ Code ABS Control Module J104

Tightening Specifications

- ◆ Refer to ➔ [-4.1.1 ABS Mark 70 \(ABS/ASR\) -, page 39](#)

4.4.2 ABS Control Module -J104-, Attaching to ABS Hydraulic Unit -N55- (ABS Mark 60 EC ABS/EDL/ASR/ESP)

Installing

Assembly is performed in reverse order. Note the following:



Note

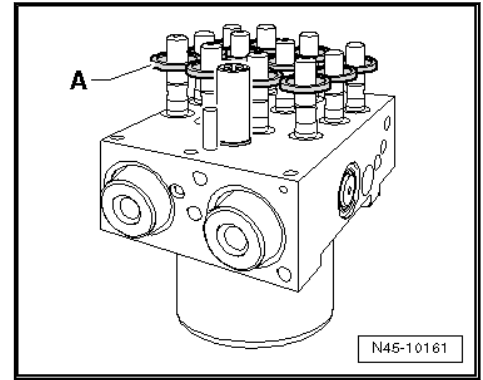
- ◆ A new ABS Control Module -J104- can be installed on an old ABS Hydraulic Unit -N55- maximum twice. This assures the elastic seal will not leak.
- ◆ A used ABS Control Module -J104- may not be installed a second time.



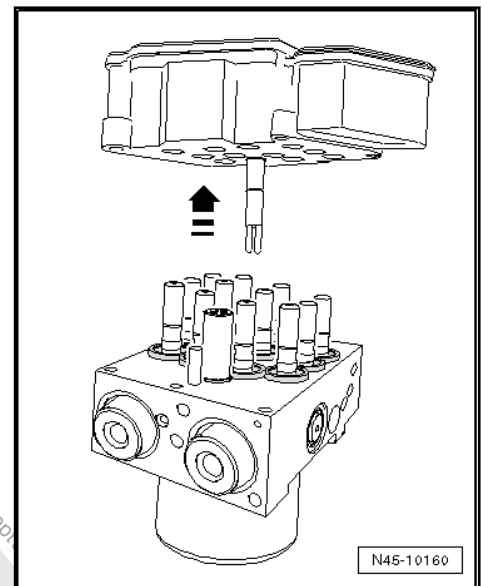
WARNING

Excessive shaking (for example, dropping, impact) can destroy the ABS Control Module -J104-. The ABS Control Module -J104- may no longer be used afterward.

- Surfaces must be cleaned before assembling.
- Slide all seals -A- slightly over the valve body.

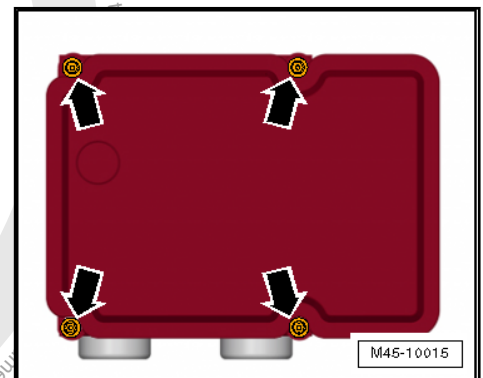


- Place the ABS Control Module -J104- on the ABS Hydraulic Unit -N55- without tilting it.



Seals are then brought into their end position.

- Install the ABS Hydraulic Unit -N55- and the ABS Control Module -J104- with the new screws -arrows- provided diagonally and in steps to the tightening specification.



If a new ABS Control Module -J104- was installed, it must be coded.

Use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System



◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60

EC

◆ Function

◆ Code ABS Control Module J104

A basic setting on the Steering Angle Sensor -G85-, the Transverse Acceleration Sensor -G200- and the Brake Pressure Sensor 1 -G201- must be performed if a new ABS Control Module -J104- was installed.

Use the Vehicle Diagnostic Tester.

◆ Chassis

◆ Brake System

◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60

EC

◆ Function

◆ Sensor basic setting (G85/ G200/ G201/ G251)

Tightening Specifications

◆ Refer to ⇒ -4.1.2 ABS Mark 60 EC (ABS/EDL/ASR/ESP)”, page 41

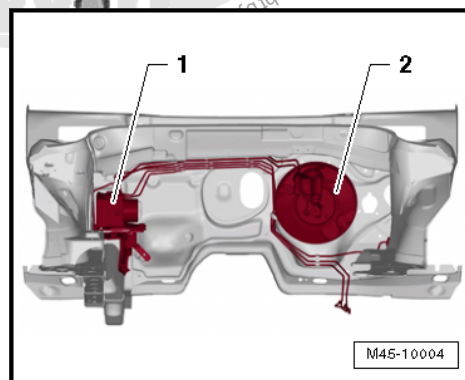
4.5 Brake Lines, Attaching to Hydraulic Unit

⇒ L4.5.1 ines, Connecting to ABS Hydraulic Unit N55, (ABS Mark 70 ABS/ASR)”, page 128

⇒ L4.5.4 ines, Attaching to ABS Hydraulic Unit N55, (ABS Mark 60 EC ABS/EDL/ASR/ESP)”, page 133

4.5.1 Brake Lines, Connecting to ABS Hydraulic Unit -N55-, (ABS Mark 70 ABS/ASR)

Installation location:



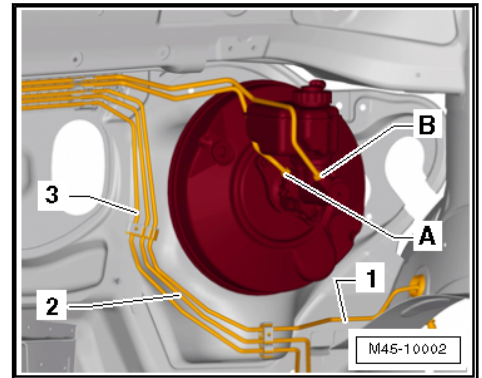
- 1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-
- 2 - Brake Booster with Tandem Brake Master Cylinder



Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.

On Tandem Master Brake Cylinder:



A - Master Brake Cylinder Primary Piston Circuit to the ABS Hydraulic Unit -N55-.

- Identification: Pipe Fitting with M10 x 1 Threads

B - Master Brake Cylinder Secondary Piston Circuit to the ABS Hydraulic Unit -N55-.

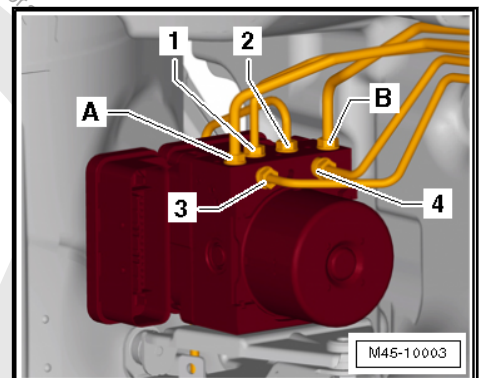
- Identification: Pipe Fitting with M12 x 1 Threads

1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

2 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Left Rear Brake Cylinder

3 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Right Rear Brake Cylinder

On the ABS Hydraulic Unit -N55-:



A - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Primary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads.

B - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Secondary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads

1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

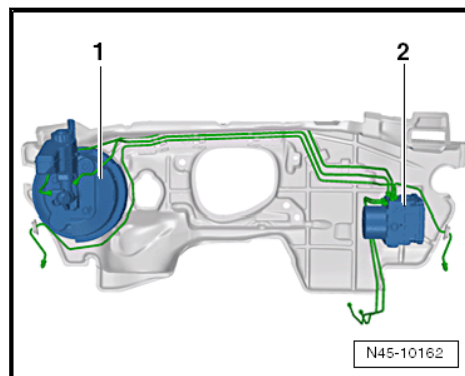


- Identification: Pipe Fitting with M10 x 1 Threads
- 2 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper
- Identification: Pipe Fitting with M12 x 1 Threads
- 3 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Right Rear Brake Cylinder
- Identification: Pipe Fitting with M10 x 1 Threads
- 4 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Left Rear Brake Cylinder
- Identification: Pipe Fitting with M12 x 1 Threads

4.5.2 Brake Lines, Connecting to ABS Hydraulic Unit -N55-, RHD (ABS Mark 70 ABS/ASR)

NOT FOR NORTH AMERICAN MARKET

Installation location:



- 1 - Brake Booster with Tandem Brake Master Cylinder
- 2 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-

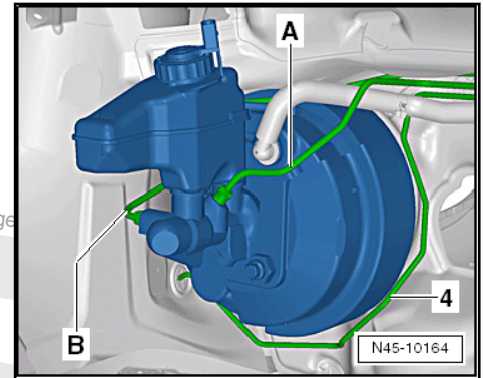


Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.



On tandem master brake cylinder:



A - Master Brake Cylinder Primary Piston Circuit to the ABS Hydraulic Unit -N55-.

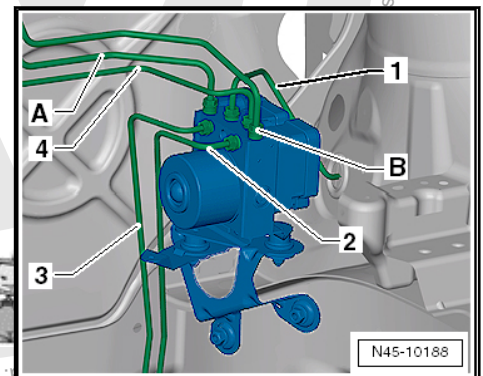
- Identification: Pipe Fitting with M10 x 1 Threads

B - Master Brake Cylinder Secondary Piston Circuit to the ABS Hydraulic Unit -N55-.

- Identification: Pipe Fitting with M12 x 1 Threads

4 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper

On the ABS Hydraulic Unit -N55-:



A - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Primary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads.

B - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Secondary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads

1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

- Identification: Pipe Fitting with M10 x 1 Threads

2 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper

- Identification: Pipe Fitting with M12 x 1 Threads

3 - ABS Hydraulic Unit -N55- to the Right Rear Brake Caliper

- Identification: Pipe Fitting with M10 x 1 Threads

4 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper

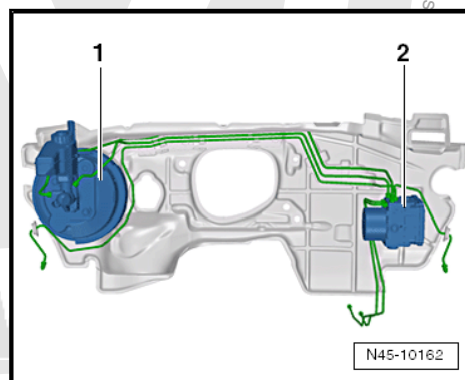
- Identification: Pipe Fitting with M12 x 1 Threads



4.5.3 Brake Lines, Attaching to ABS Hydraulic Unit -N55-, RHD (ABS Mark 60 EC ABS/EDL/ASR/ESP)

NOT FOR NORTH AMERICAN MARKET

Installation location:



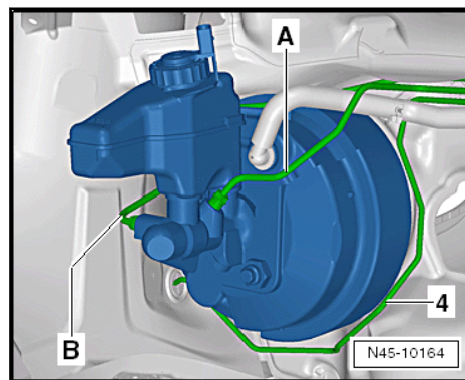
- 1 - Brake Booster with Tandem Brake Master Cylinder
- 2 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-



Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.

On tandem master brake cylinder:



A - Master Brake Cylinder Primary Piston Circuit to the ABS Hydraulic Unit -N55-.

- Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

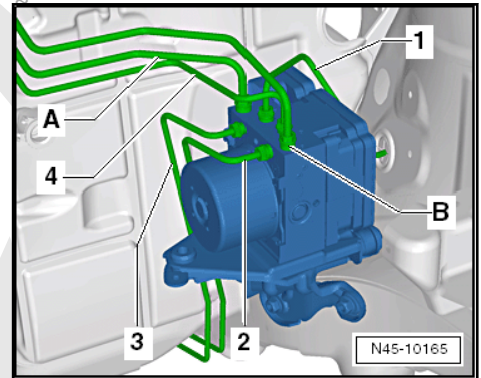
B - Master Brake Cylinder Secondary Piston Circuit to the ABS Hydraulic Unit -N55-.



- Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

4 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper

On the ABS Hydraulic Unit -N55-:



A - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Primary Piston Circuit

- Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

B - ABS Hydraulic Unit -N55- to the Master Brake Cylinder Secondary Piston Circuit

- Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

- Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread

2 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper

- Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread

3 - ABS Hydraulic Unit -N55- to the Right Rear Brake Caliper

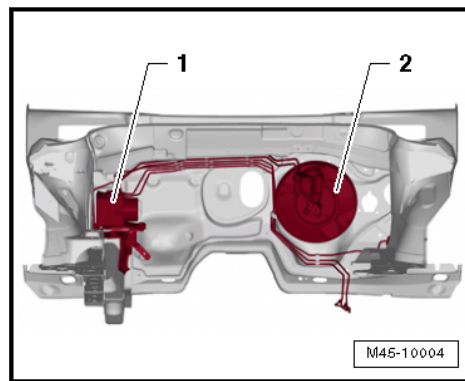
- Identification: 5.25 mm diameter and tube fitting with a M10 x 1 thread

4 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper

- Identification: 5.25 mm diameter and tube fitting with a M12 x 1 thread

4.5.4 Brake Lines, Attaching to ABS Hydraulic Unit -N55-, (ABS Mark 60 EC ABS/EDL/ASR/ESP)

Installation location:



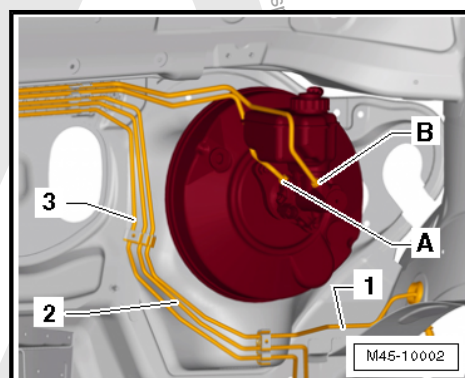
- 1 - ABS Hydraulic Unit -N55- with ABS Control Module -J104-
- 2 - Brake Booster with Tandem Brake Master Cylinder



Caution

Do not confuse the brake lines when connecting them to the tandem master cylinder and the ABS Hydraulic Unit -N55-. Mark the lines in their installed position before removing them.

On Tandem Master Brake Cylinder:



A - Master Brake Cylinder Primary Piston Circuit to the ABS Hydraulic Unit -N55-.

- Identification: Pipe Fitting with M10 x 1 Threads

B - Master Brake Cylinder Secondary Piston Circuit to the ABS Hydraulic Unit -N55-.

- Identification: Pipe Fitting with M12 x 1 Threads

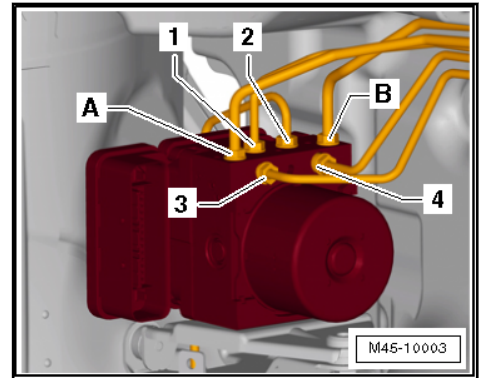
1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

2 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Left Rear Brake Cylinder

3 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Right Rear Brake Cylinder



On the ABS Hydraulic Unit -N55-:



A - ABS Hydraulic Unit -N55- to the Master Brake Cylinder
Primary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads.

B - ABS Hydraulic Unit -N55- to the Master Brake Cylinder
Secondary Piston Circuit

- Identification: Pipe Fitting with M12 x 1 Threads

1 - ABS Hydraulic Unit -N55- to the Left Front Brake Caliper

- Identification: Pipe Fitting with M10 x 1 Threads

2 - ABS Hydraulic Unit -N55- to the Right Front Brake Caliper

- Identification: Pipe Fitting with M12 x 1 Threads

3 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Right Rear Brake Cylinder

- Identification: Pipe Fitting with M10 x 1 Threads

4 - ABS Hydraulic Unit -N55- to the Left Rear Brake Caliper/Left Rear Brake Cylinder

- Identification: Pipe Fitting with M12 x 1 Threads



5 Sensors

⇒ [-5.1 Front Axle Speed Sensor", page 136](#)

⇒ [-5.2 Rear Axle Speed Sensor", page 137](#)

⇒ [R5.3 ight Front ABS Wheel Speed Sensor G45 / Left Front ABS Wheel Speed Sensor G47, Removing and Installing", page 139](#)

⇒ [R5.4 ight Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46", page 141](#)

⇒ [R5.5 ate Sensor and Transverse Acceleration Sensor, Removing and Installing", page 144](#)

5.1 Overview - Front Axle Speed Sensor

⇒ [-5.1.1 Front Axle Speed Sensor", page 136](#)

5.1.1 Overview - Front Axle Speed Sensor

1 - Right/Left Front ABS Wheel Speed Sensor -G45- / -G47-

- ❑ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ❑ Removing and installing. Refer to ⇒ [R5.3.1 ight Front ABS Wheel Speed Sensor G45 / Left Front ABS Wheel Speed Sensor G47, Removing and Installing", page 139](#).

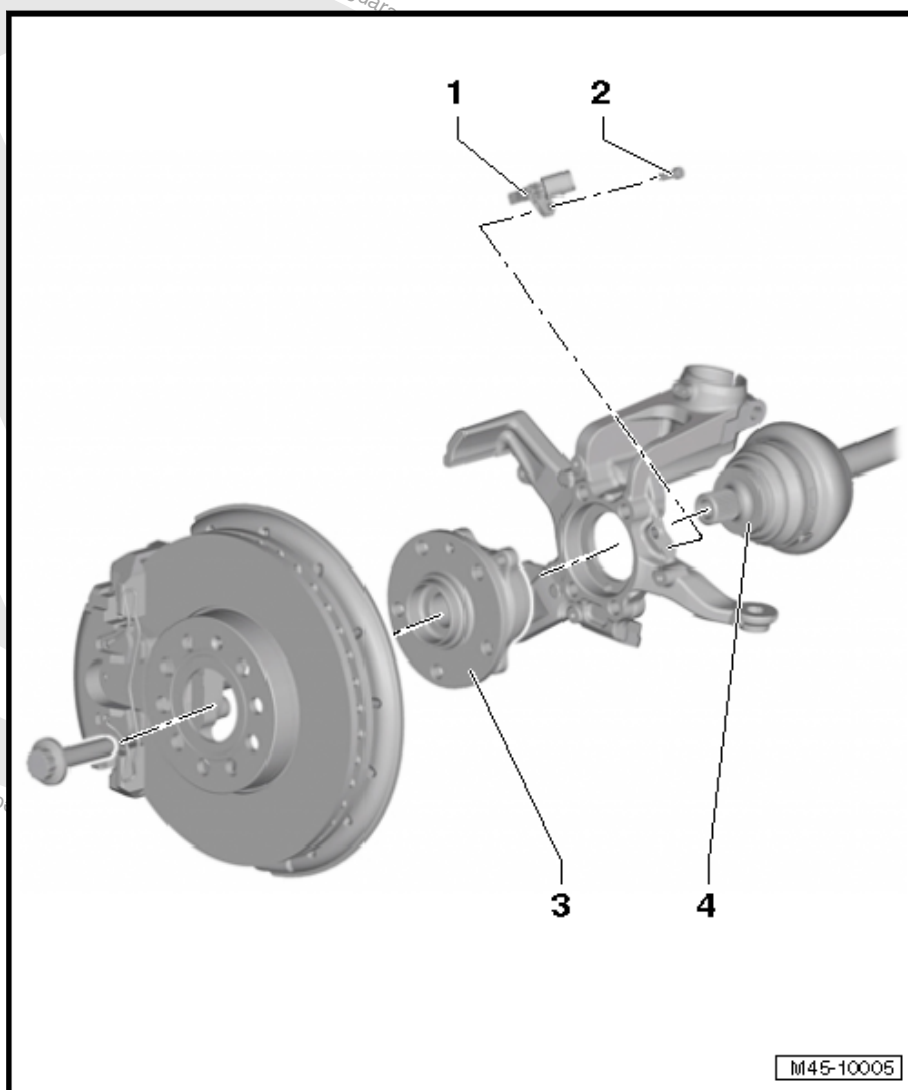
2 - Screw

- ❑ 8 Nm

3 - Wheel Bearing Unit

- ❑ The ABS sensor ring is installed in the wheel bearing

4 - Drive Axle





5.2 Overview - Rear Axle Speed Sensor

⇒ [-5.2.1 Rear Axle Speed Sensor, Twist Beam Rear Suspension with Drum Brake](#), page 137

⇒ [-5.2.2 Rear Axle Speed Sensor, Twist Beam Rear Suspension with Disc Brake](#), page 137

⇒ [-5.2.3 Rear Axle Speed Sensor, Multi-Link Rear Axle](#), page 138

5.2.1 Overview - Rear Axle Speed Sensor, Twist Beam Rear Suspension with Drum Brake

1 - Rear Speed Sensor

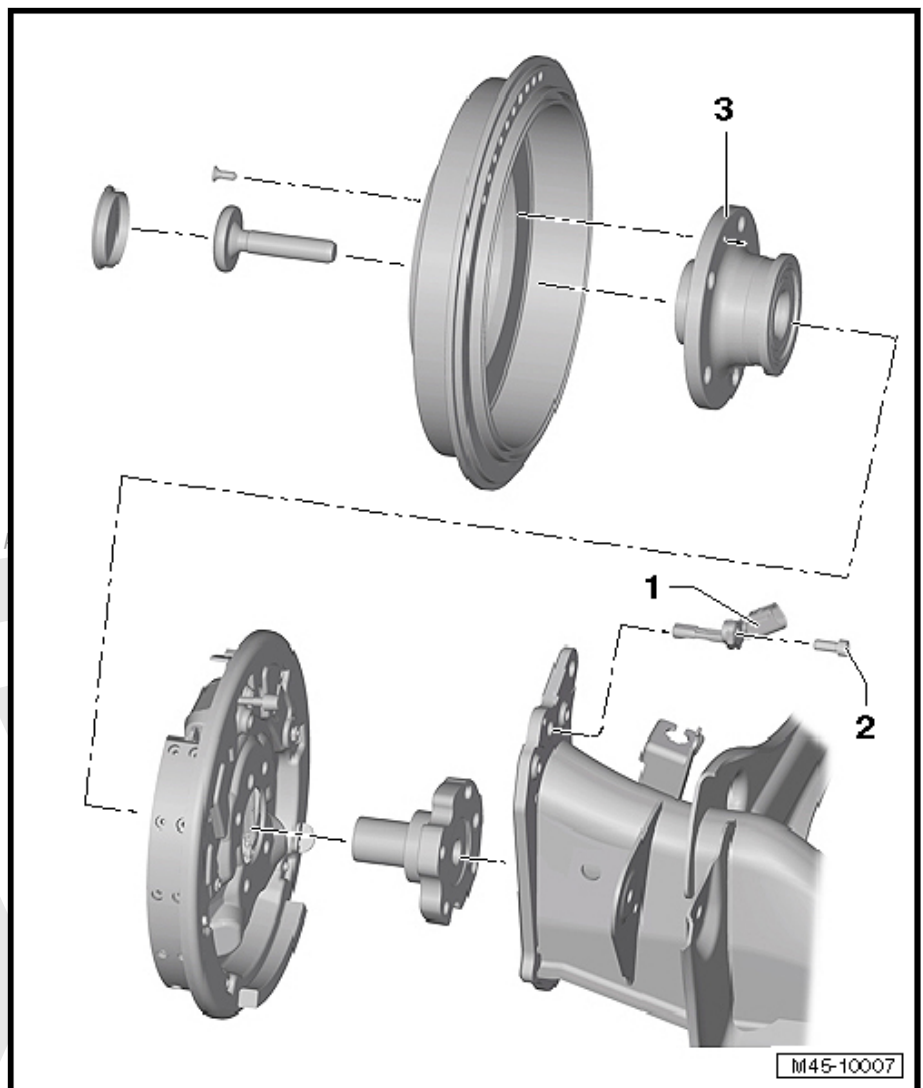
- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to ⇒ [R5.4.1 Right Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Drum Brake, Removing and Installing](#), page 141.

2 - Screw

- ☐ 8 Nm

3 - Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing



5.2.2 Overview - Rear Axle Speed Sensor, Twist Beam Rear Suspension with Disc Brake



1 - Rear Speed Sensor

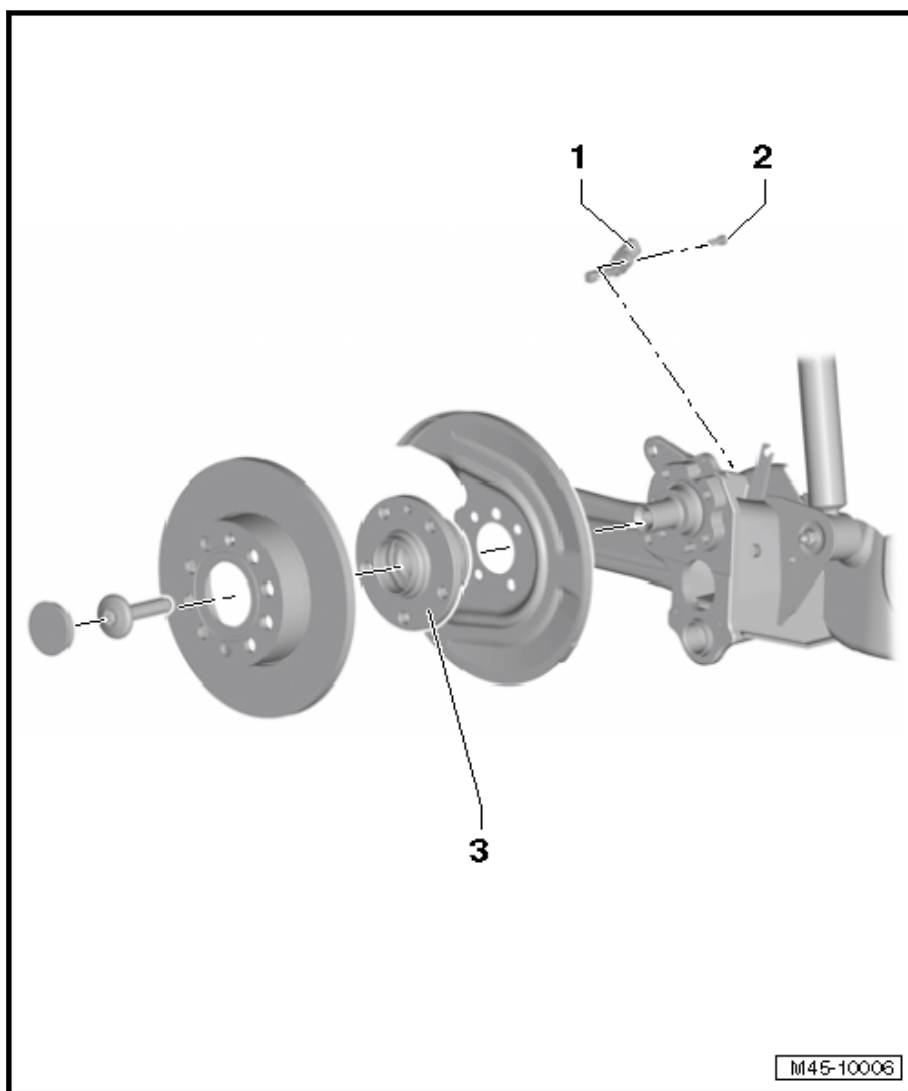
- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to ➤ [R5.4.2 ight Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Disc Brakes, Removing and Installing](#), page 142 .

2 - Screw

- ☐ 8 Nm

3 - Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing



5.2.3 Overview - Rear Axle Speed Sensor, Multi-Link Rear Axle



1 - Rear Speed Sensor

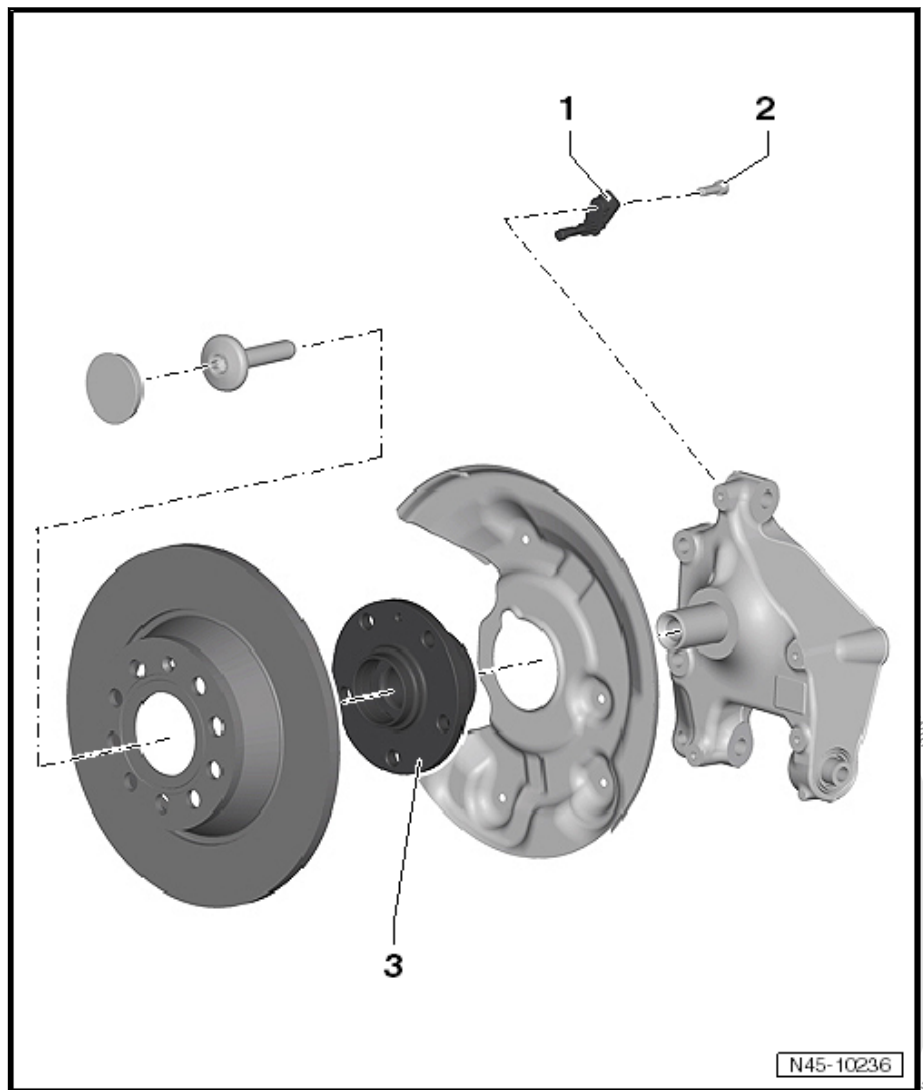
- ☐ Before inserting the sensor, clean inner surface of the hole and coat with Hot Bolt Paste G 052 112 A3.
- ☐ Removing and installing. Refer to ➤ [R5.4.3 Right Rear ABS Wheel Speed Sensor G44/ Left Rear ABS Wheel Speed Sensor G46 on Multi-Link Rear Axle, Removing and Installing](#), page 143.

2 - Screw

- ☐ 8 Nm

3 - Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing



5.3 Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-, Removing and Installing

➤ [R5.3.1 Right Front ABS Wheel Speed Sensor G45 / Left Front ABS Wheel Speed Sensor G47, Removing and Installing](#), page 139

5.3.1 Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-, Removing and Installing

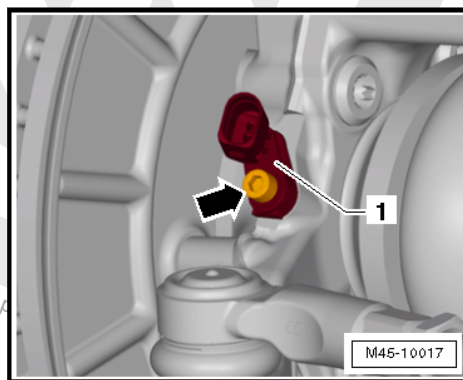
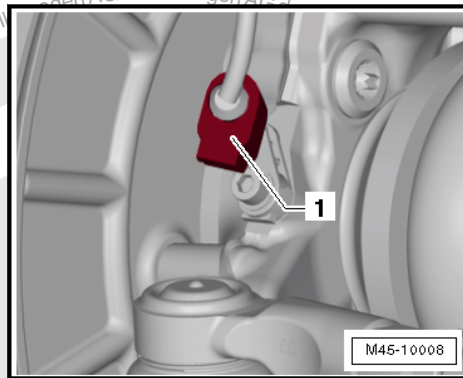
Perform the Following:

Removing

- Raise the vehicle.
- Release and disconnect the connector -1-.



- Remove the bolt -arrow-.
- Remove the Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47- 1- from the wheel bearing housing.



Installing

Install in reverse order of removal. Note the following:

- Clean the inner surface of the opening before inserting the Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-.
- Coat all around with Hot Bolt Paste -G 052 112 A3-.
- Install the Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47- into the hole in the wheel bearing housing and tighten it.

Tightening Specifications

- ◆ Refer to ➤ [-5.1.1 Front Axle Speed Sensor-, page 136](#)



5.4 Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

⇒ R5.4.1 Right Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Drum Brake, Removing and Installing", page 141

⇒ R5.4.2 Right Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Disc Brakes, Removing and Installing", page 142

⇒ R5.4.3 Right Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Multi-Link Rear Axle, Removing and Installing", page 143

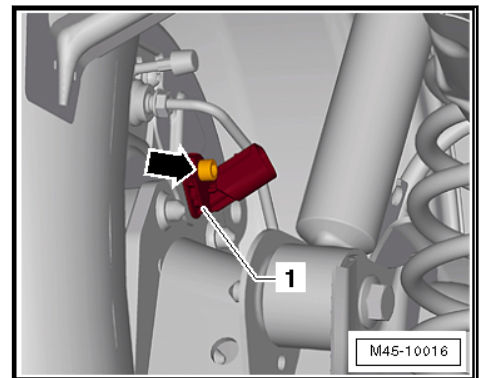
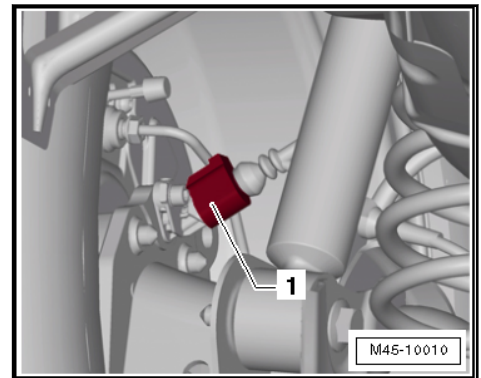
5.4.1 Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46- on Twist Beam Rear Suspension with Drum Brake, Removing and Installing

Perform the Following:

Removing

- Raise the vehicle.
- Release and disconnect the connector -1-.

- Remove the bolt -arrow-.
- Remove the Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46- -1- from the rear axle.



Installing

Install in reverse order of removal. Note the following:



- Clean the inner surface of the opening before inserting the Right Rear ABS Wheel Speed Sensor -G44-/ Left Rear ABS Wheel Speed Sensor -G46-.
- Coat all the way around with hot bolt paste G 052 112 A3.
- Install the Right Rear ABS Wheel Speed Sensor -G44-/ Left Rear ABS Wheel Speed Sensor -G46- into the hole in the rear axle and tighten it.

Tightening Specifications

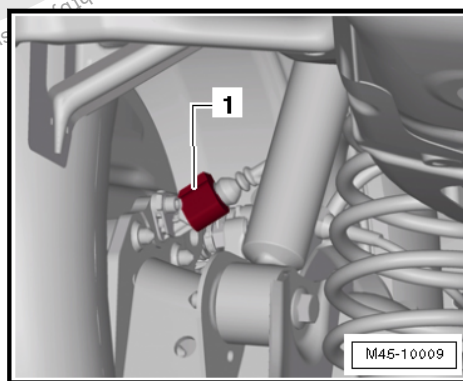
- ◆ Refer to ➤ [-5.2.1 Rear Axle Speed Sensor, Twist Beam Rear Suspension with Drum Brake](#), page 137

5.4.2 Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46- on Twist Beam Rear Suspension with Disc Brakes, Removing and Installing

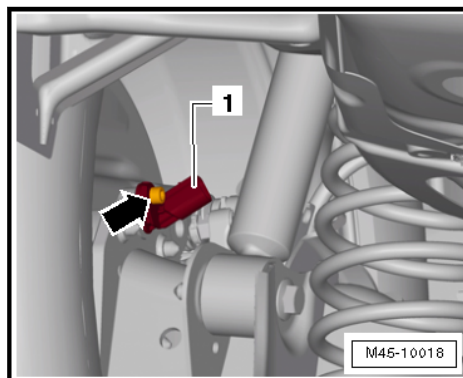
Perform the Following:

Removing

- Raise the vehicle.
- Release and disconnect the connector -1-.



- Remove the bolt -arrow-.
- Remove the Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46- -1- from the wheel bearing housing.



Installing

Install in reverse order of removal. Note the following:



- Clean the inner surface of the opening before inserting the Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-.
- Coat all around with Hot Bolt Paste -G 052 112 A3-.
- Insert the speed sensor into the hole in the rear axle and tighten it.

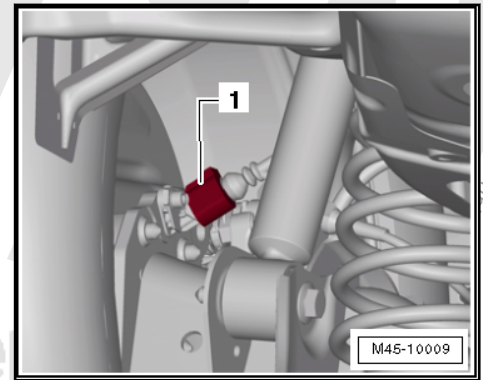
Tightening Specifications

- ◆ Refer to ➤ [-5.2.2 Rear Axle Speed Sensor, Twist Beam Rear Suspension with Disc Brake](#), page 137

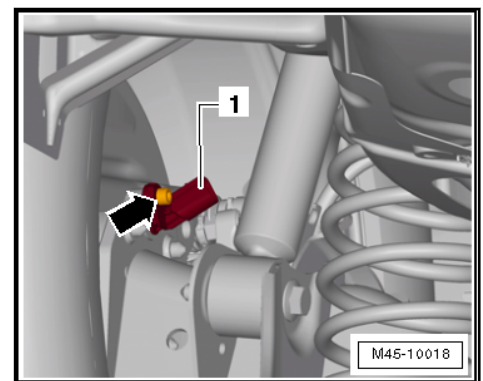
5.4.3 Right Rear ABS Wheel Speed Sensor -G44-/ Left Rear ABS Wheel Speed Sensor -G46- on Multi-Link Rear Axle, Removing and Installing

Removing

- Raise the vehicle.
- Release and disconnect the connector -1-.



- Remove the bolt -arrow-.
- Remove the Right Rear ABS Wheel Speed Sensor -G44-/ Left Rear ABS Wheel Speed Sensor -G46- -1- from the wheel bearing housing.



Installing

Install in reverse order of removal. Note the following:

- Clean the inner surface of the opening before inserting the Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-.
- Coat all around with Hot Bolt Paste -G 052 112 A3-.



- Insert the speed sensor into the hole in the rear axle and tighten it.

Tightening Specifications

- ◆ Refer to ➤ [-5.2.3 Rear Axle Speed Sensor, Multi-Link Rear Axle](#)", page 138

5.5 Rotation Rate Sensor and Transverse Acceleration Sensor, Removing and Installing

For the ABS-Mark 60 EC in this vehicle, the Transverse Acceleration Sensor -G200-, the Rotation Rate Sensor -G202- and the Longitudinal Acceleration Sensor -G251- (depending on the vehicle equipment level) are installed in the ABS Control Module -J104-.

It is not possible to replace them separately.

- ABS Control Module -J104-, Removing and installing. Refer to ➤ [A4.2.6 ABS Control Module J104 and ABS Hydraulic Unit N55, Removing and Installing, with 4-Cylinder Gasoline Engine and ABS Mark 60 EC ABS/EDL/ASR/ESP](#)", page 87 .



6 ESP System Components, Removing and Installing

Vehicles without Electro-Mechanical Power Steering

These vehicles have the Steering Angle Sensor -G85- on the steering column. Refer to ➤ [w6.1 ith Steering Angle Sensor G85 on Steering Column", page 145](#) .

Steering Angle Sensor -G85-, removing and installing at the steering column. Refer to ➤ [S6.2 teering Angle Sensor G85, Removing and Installing at Steering Column", page 146](#) .

Vehicles with Electro-Mechanical Power Steering

Steering Angle Sensor -G85-, removing and installing. Refer to ➤ [w6.3 ith Electro-Mechanical Power Steering", page 148](#) .

6.1 Vehicles with Steering Angle Sensor -G85- on Steering Column

Overview

The Steering Angle Sensor -G85- is installed on the steering column.

1 - Screw

- ☐ 30 Nm + 90°
- ☐ Always replace if removed

2 - Steering Wheel

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Wheel Airbag; Overview - Steering Wheel Airbag.

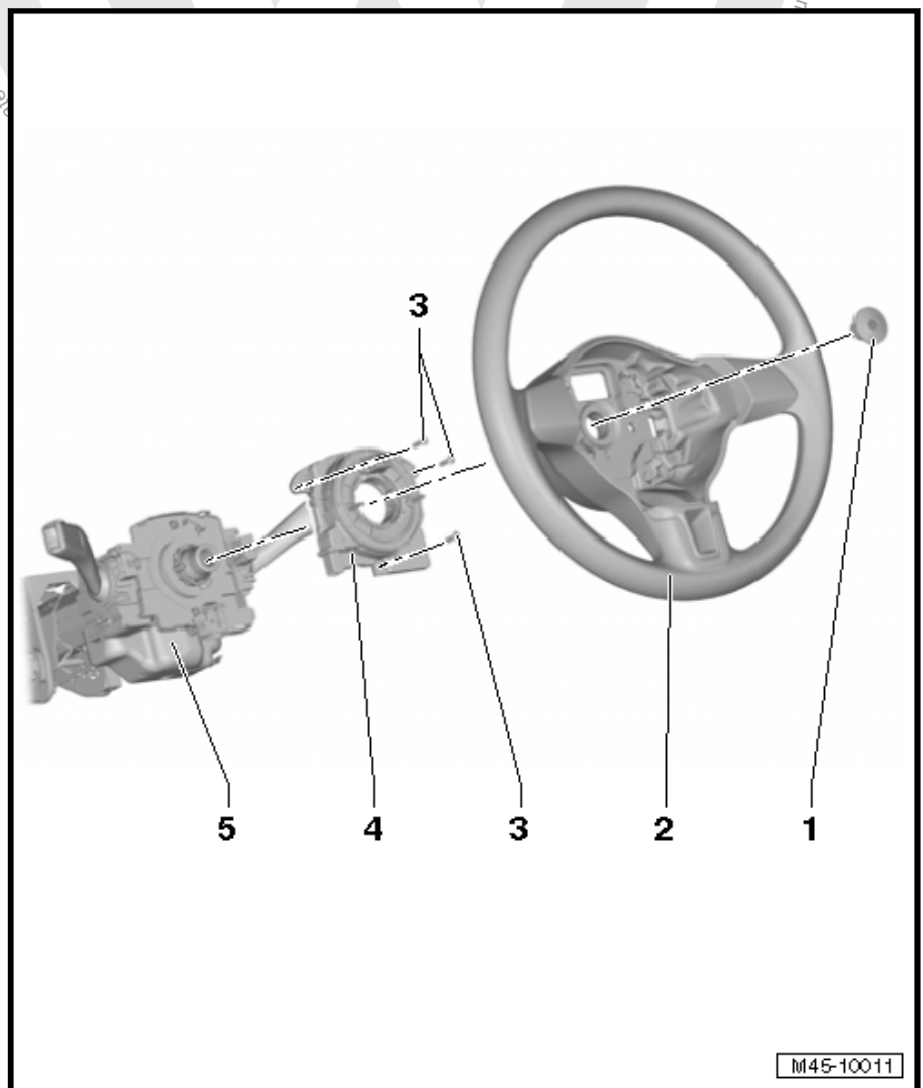
3 - Screw

- ☐ 1.5 Nm
- ☐ Quantity: 3

4 - Steering Angle Sensor - G85-

- ☐ Removing and installing. Refer to ➤ [S6.2 teering Angle Sensor G85, Removing and Installing at Steering Column", page 146](#) .

5 - Steering Column



M45-10011



6.2 Steering Angle Sensor -G85-, Removing and Installing at Steering Column

Perform the Following:

Removing



Note

- ◆ *The Steering Angle Sensor -G85- must be in the center position when being removed.*
- ◆ *The steering must be in the straight position.*
- ◆ *Mark the center position and secure it with tape.*
- ◆ *Make sure that the centered position is maintained.*
- Bring wheels in the straight position.
- Switch the ignition off and remove the ignition key.
- Remove the steering wheel airbag. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Wheel Airbag; Overview - Steering Wheel Airbag.



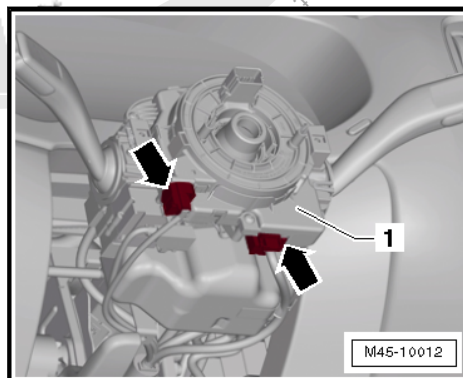
WARNING

Before performing work on the electrical system and removing the steering wheel, the following conditions must be met:

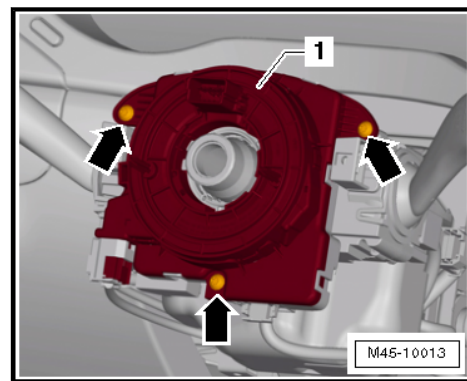
- ◆ **Disconnect the battery ground cable. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.**
- ◆ **The wheels must be in the straight position.**

The airbag system may fail during future operation if these warnings are not followed!

- Remove the steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68; Storage Compartments and Covers; Steering Column Trim Panel, Removing and Installing.
- Release and disconnect the connector -arrows- on the Steering Angle Sensor -G85-.



- Remove the threaded connection -arrows- on the Steering Angle Sensor -G85- -1-.
- Remove the Steering Angle Sensor -G85- from the steering column.



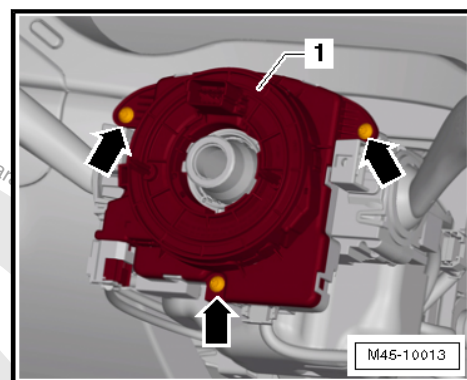
Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *The Steering Angle Sensor -G85- must be in the center position when being installed.*
- ◆ *If a new Steering Angle Sensor -G85- is being installed, remove the transportation protection after tightening it on the steering column.*
- Install the Steering Angle Sensor -G85- -1- and tighten the bolts -arrows- evenly.



Perform a basic setting after the Steering Angle Sensor -G85- is installed.

To do so, use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60 EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

Tightening Specifications

- ◆ Refer to ➤ [w6.1 with Steering Angle Sensor G85 on Steering Column](#), page 145
- ◆ Steering wheel airbag. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Wheel Airbag; Overview - Steering Wheel Airbag.



6.3 Vehicles with Electro-Mechanical Power Steering

The Steering Angle Sensor -G85- Is Installed in the Steering Gear.

Vehicles with Steering Angle Sensor -G85- on steering gear.
Refer to ➔ [w6.4 ith Steering Angle Sensor G85 on Steering Gear](#), page 148 .

6.4 Vehicles with Steering Angle Sensor - G85- on Steering Gear

The Steering Angle Sensor -G85- cannot be replaced separately.

Refer to Vehicle Diagnostic Tester for fault diagnostics.

For replacing, replace the steering gear. Refer to ➔ [page 148](#) .

Removing

Steering, removing and installing. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 48; Hydraulic Power Steering Gear, Servicing; Overview - Power Steering Gear.

Installing

Install in reverse order of removal. Note the following:

After installing the steering gear with the Steering Angle Sensor -G85-, a basic setting must be performed.

To do so, use the Vehicle Diagnostic Tester.

- ◆ Chassis
- ◆ Brake System
- ◆ Anti-lock braking system ABS/EDL/ASR/ESP Mark 60
EC
- ◆ Function
- ◆ Sensor basic setting (G85/ G200/ G201/ G251)

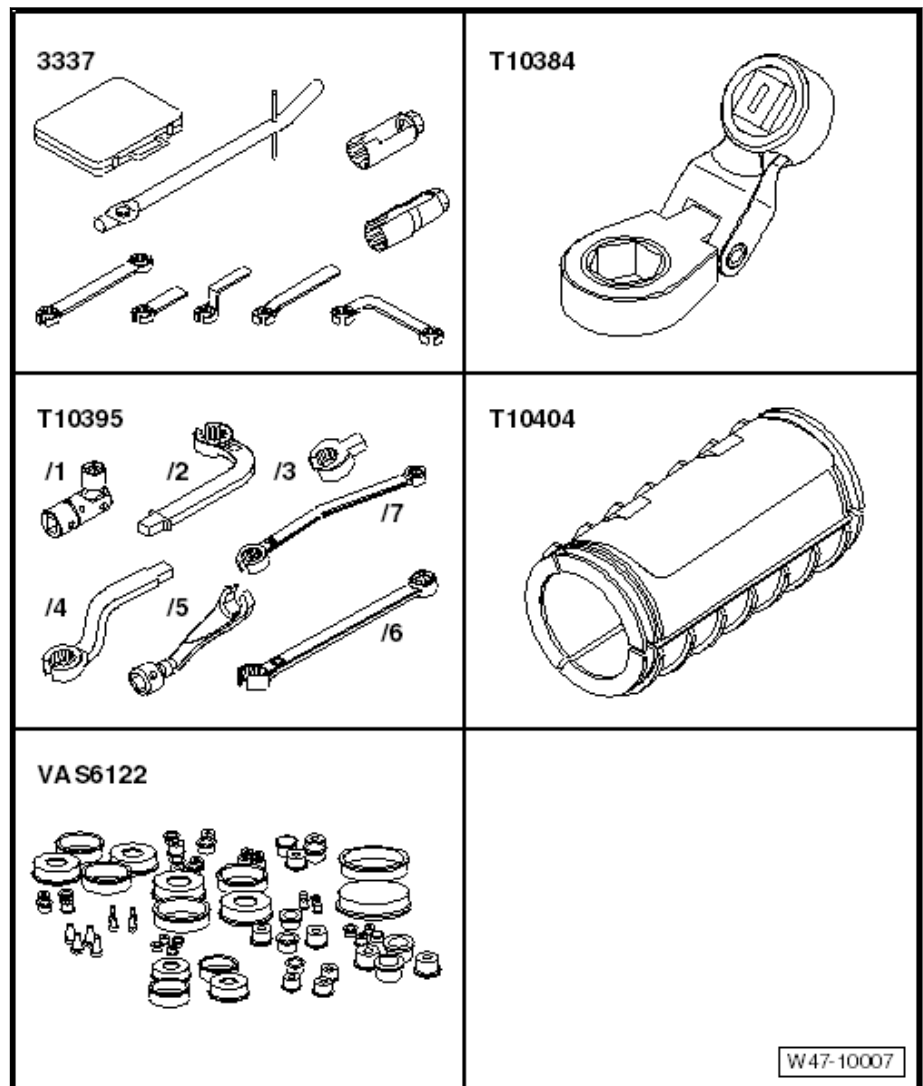
Tightening Specifications

- ◆ Steering gear. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 48; Hydraulic Power Steering Gear, Servicing; Overview - Power Steering Gear.

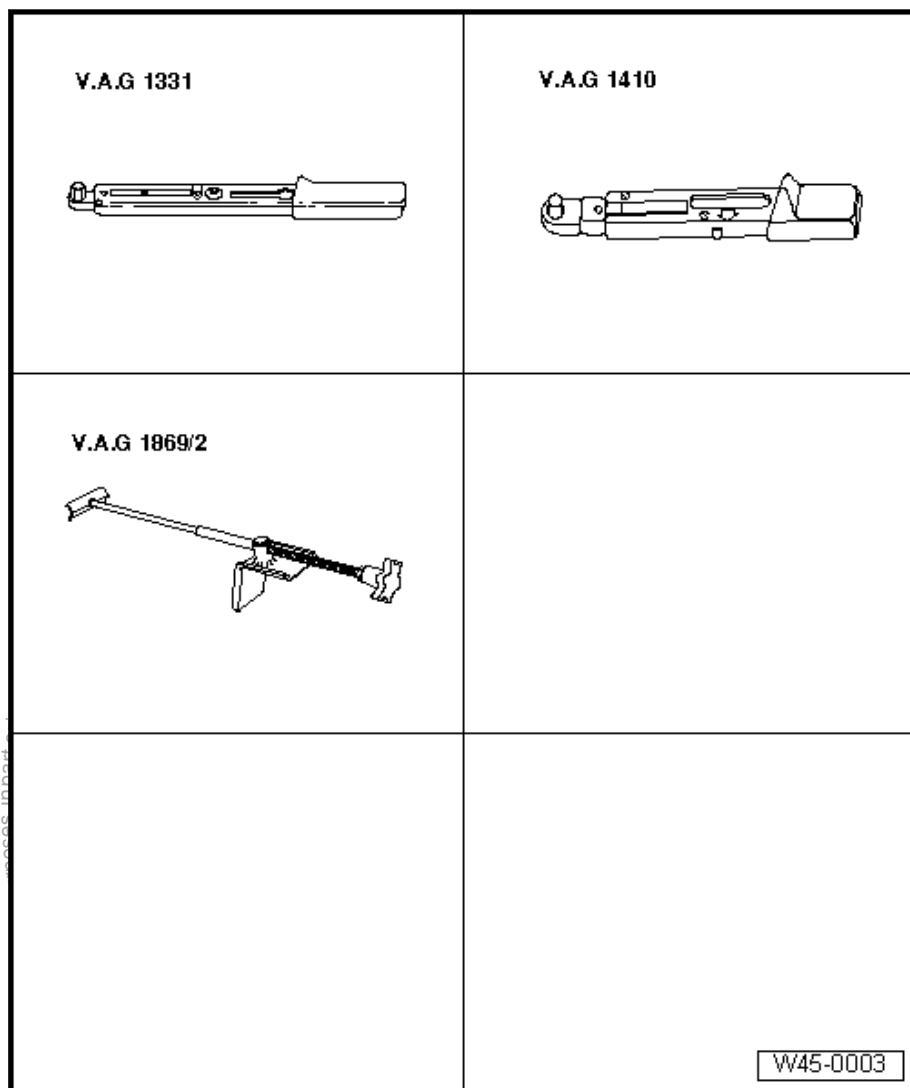


7 Special Tools

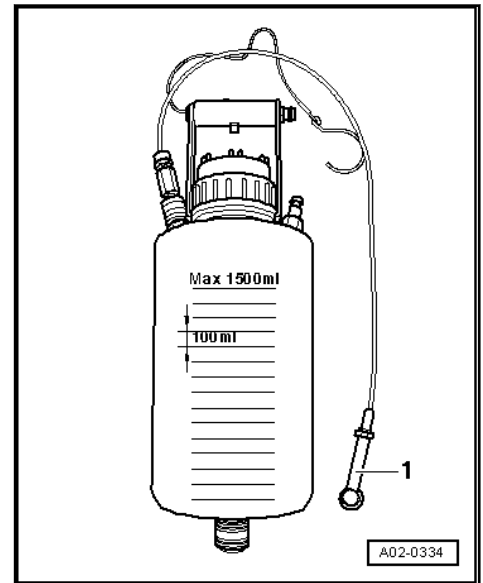
Special tools and workshop equipment required



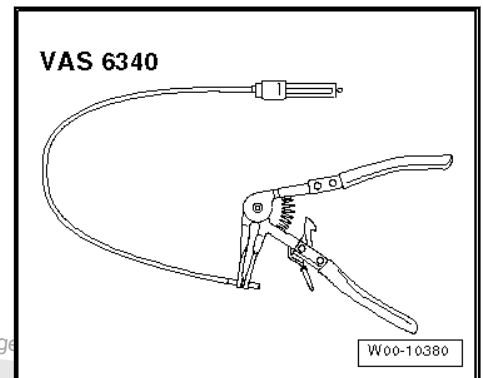
- ◆ Ring Spanner 7-Piece Set -3337-
- ◆ Wrench SW13 -T10384-
- ◆ Diesel Engine Tool Set - 17mm -T10395A-
- ◆ Transportation Lock -T10404-
- ◆ Engine Bung Set -VAS6122-



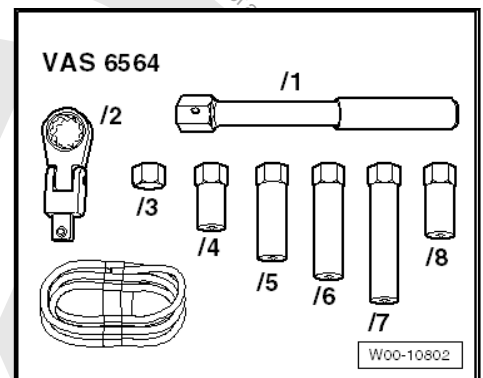
- ◆ Torque Wrench 5-50Nm -VAG1331-
 - ◆ Torque Wrench -VAG1410-
 - ◆ Brake Pedal Actuator -VAG1869/2-
- Brake Charger/Bleeder Unit - Used Fluid Bottle -CRP1898020-



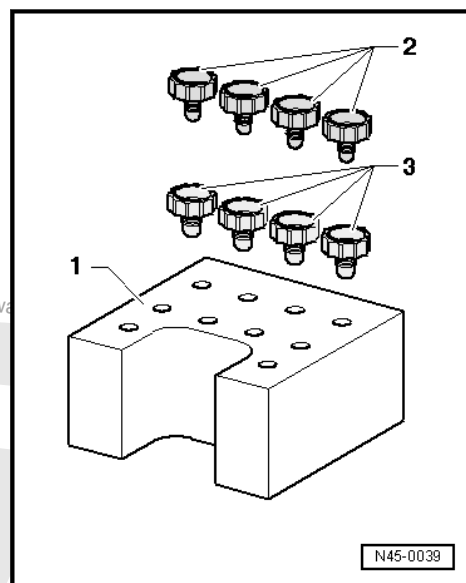
Hose Clip Pliers -VAS6340-



Tool Set for Brake Bleeding -VAS6564-



Plug -1H0 698 311 A-





46 – Mechanical Components

1 Front Brakes

⇒ [-1.1 Front Brakes", page 153](#)

⇒ [P1.2 ads, Removing and Installing", page 161](#)

⇒ [C1.3 aliper, Removing and Installing", page 167](#)

⇒ [C1.4 arrier, Removing and Installing", page 175](#)

⇒ [t1.5 he brake rotor", page 177](#)

⇒ [S1.6 hield, Removing and Installing", page 180](#)

1.1 Overview - Front Brakes

⇒ [-1.1.1 Front Brakes, FS III without Brake Pad Wear Indicator", page 153](#)

⇒ [-1.1.2 Front Brakes, FS III with Brake Pad Wear Indicator", page 155](#)

⇒ [-1.1.3 Front Brakes, FN3 15/16 Inch without Brake Pad Wear Indicator", page 157](#)

⇒ [-1.1.4 Front Brakes, FN3 15/16 Inch with Brake Pad Wear Indicator", page 159](#)

1.1.1 Overview - Front Brakes, FS III without Brake Pad Wear Indicator



Note

- ◆ After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.
- ◆ Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.
- ◆ Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).



1 - Screw

- ☐ 70 Nm +90°
- ☐ Always replace if removed
- ☐ Quantity: 4

2 - Wheel Bearing Housing

- ☐ With integrated brake carrier

3 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-

- ☐ Clean the inside of the hole and coat it with Hot Bolt Paste -G 052.112.A3- before installing the sensor.

4 - Screw

- ☐ 8 Nm

5 - Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

6 - Cover Plate

- ☐ Removing and installing. Refer to ➤ [P1.6.1 late, Removing and Installing, Brake Caliper FS III", page 180](#).

7 - Brake Rotor

- ☐ Internally vented
- ☐ 280 mm diameter
- ☐ Thickness 22 mm
- ☐ Wear limit: 19 mm
- ☐ Replace on both sides of the axle
- ☐ Removing and installing. Refer to ➤ [R1.5.1 rotor, Removing and Installing, Brake Caliper FS III", page 177](#).
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

8 - Bolt

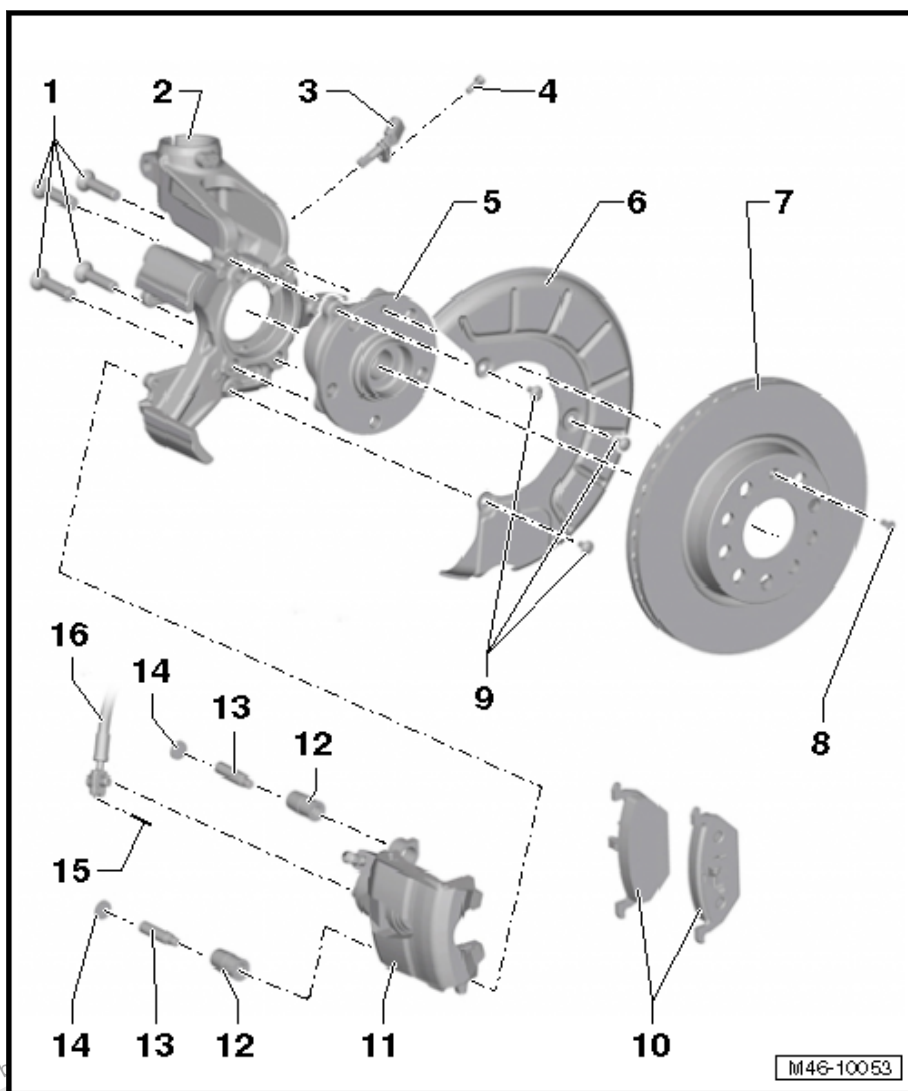
- ☐ 8 Nm

9 - Bolt

- ☐ 12 Nm

10 - Brake Pads

- ☐ 14 mm thick without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Checking thickness. Refer to ➤ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.
- ☐ Replace on both sides of the axle
- ☐ Removing and installing. Refer to ➤ [P1.2.1 ads, Removing and Installing, Brake Caliper FS III", page 161](#).





11 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Removing and installing. Refer to ➔ [C1.3.1 aliper, Removing and Installing, Brake Caliper FS III", page 167](#) .
- ☐ Servicing. Refer to ➔ [B1 rake Caliper", page 285](#) .

12 - Bearing Bushing

13 - Guide Pin

- ☐ 30 Nm

14 - Cap

- ☐ Remove

15 - Mounting Sleeve

16 - Brake Hose with Ring Connection and Banjo Bolt

- ☐ 35 Nm

1.1.2 Overview- Front Brakes, FS III with Brake Pad Wear Indicator



Note

- ◆ *After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).*



1 - Bolt

- ❑ 12 Nm
- ❑ Quantity: 3

2 - Brake Rotor

- ❑ Internally vented, 280 mm diameter
- ❑ Thickness 22 mm
- ❑ Wear limit: 19 mm
- ❑ Replace on both sides of the axle
- ❑ Remove the brake caliper before removing

3 - Bolt

- ❑ 8 Nm

4 - Brake Pads

- ❑ 14 mm thick without backing plate
- ❑ With Left Front Brake Pad Wear Sensor - G34-
- ❑ When the wear limit is reached (limit: approximately 4 mm), the Brake System Indicator Lamp -K118- turns on in the instrument cluster.
- ❑ Wear limit: 2 mm without backing plate
- ❑ Check the brake pads. Refer to ➔ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking for maintenance.

- ❑ Replace brake pads by axle
- ❑ Removing and installing. Refer to ➔ [P1.2.1 ads, Removing and Installing, Brake Caliper FS III", page 161](#).

5 - Connector

- ❑ For the Left Front Brake Pad Wear Sensor -G34-

6 - Brake Caliper

- ❑ Do not remove the brake hose when changing the brake pads.
- ❑ Removing and installing. Refer to ➔ [C1.3.1 aliper, Removing and Installing, Brake Caliper FS III", page 167](#).
- ❑ Servicing. Refer to ➔ [B1 rake Caliper", page 285](#).

7 - Guide Pin

- ❑ 30 Nm

8 - Cap

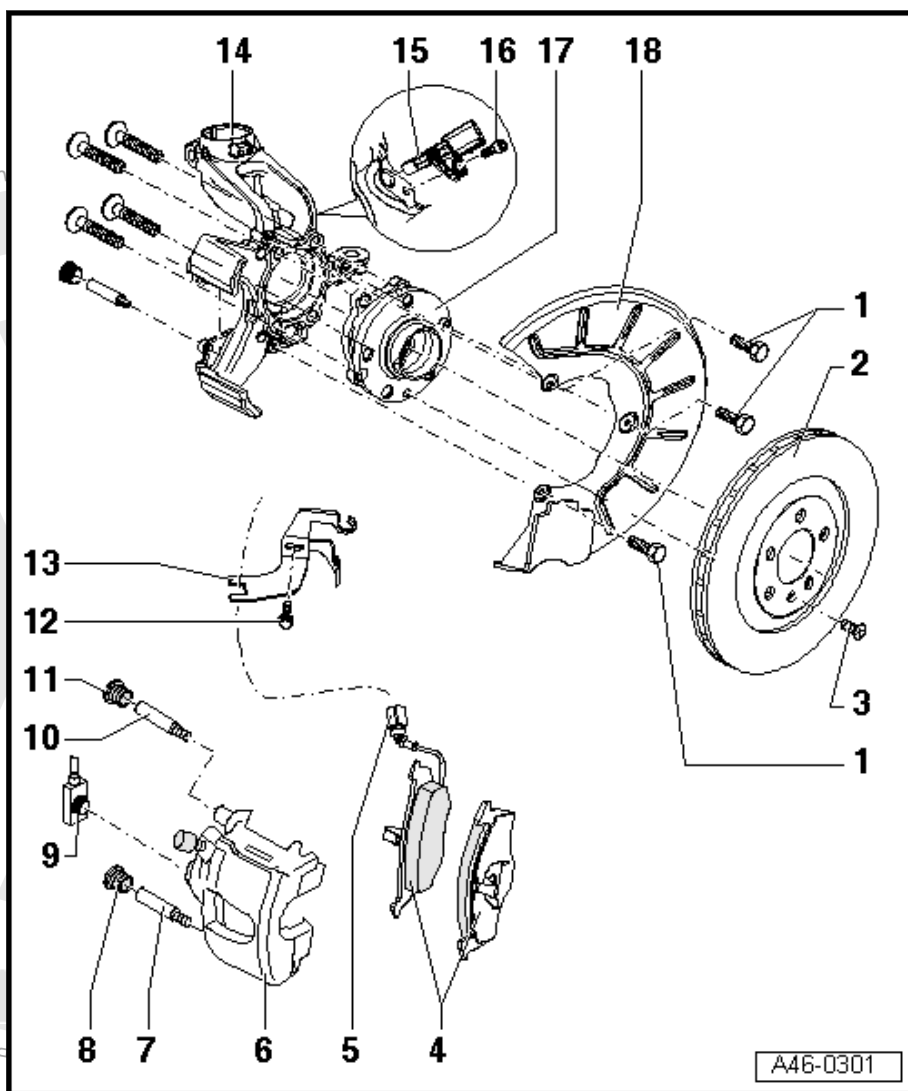
- ❑ Remove

9 - Brake Hose with Ring Connection and Banjo Bolt

- ❑ 35 Nm

10 - Guide Pin

- ❑ 30 Nm





11 - Cap

- ☐ Remove

12 - Screw

13 - Bracket

14 - Wheel Bearing Housing

- ☐ With integrated brake carrier

15 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.

16 - Screw

- ☐ 8 Nm

17 - Wheel Bearing/Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

18 - Cover Plate

- ☐ Removing and installing. Refer to ➔ [P1.6.1 late, Removing and Installing, Brake Caliper FS III](#)", page [180](#) .

1.1.3 Overview - Front Brakes, FN3 15/16 Inch without Brake Pad Wear Indicator



Note

- ◆ After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.
- ◆ Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.
- ◆ Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).





1 - Bolt

- ☐ 8 Nm

2 - Brake Rotor

- ☐ Internally vented
- ☐ 288 mm diameter
- ☐ 25 mm thickness
- ☐ Wear limit: 22 mm
- ☐ Replace on both sides of the axle
- ☐ Removing and installing. Refer to ➤ [R1.5.2 rotor, Removing and Installing, Brake Caliper FN 3", page 179](#).
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

3 - Brake Pads

- ☐ 14 mm thick without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Checking thickness. Refer to ➤ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.

- ☐ Replace on both sides of the axle

- ☐ Removing and installing. Refer to ➤ [P1.2.2 ads, Removing and Installing, Brake Caliper FN3", page 164](#).

4 - Spring

- ☐ Insert in both holes of the brake caliper

5 - Brake Carrier

- ☐ Removing and installing. Refer to ➤ [C1.4.1 arrier, Removing and Installing, Brake Caliper FN3", page 175](#).

6 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Removing and installing. Refer to ➤ [C1.3.2 aliper, Removing and Installing, Brake Caliper FN3", page 171](#).
- ☐ Servicing. Refer to ➤ [B1 rake Caliper", page 285](#).

7 - Guide Pin

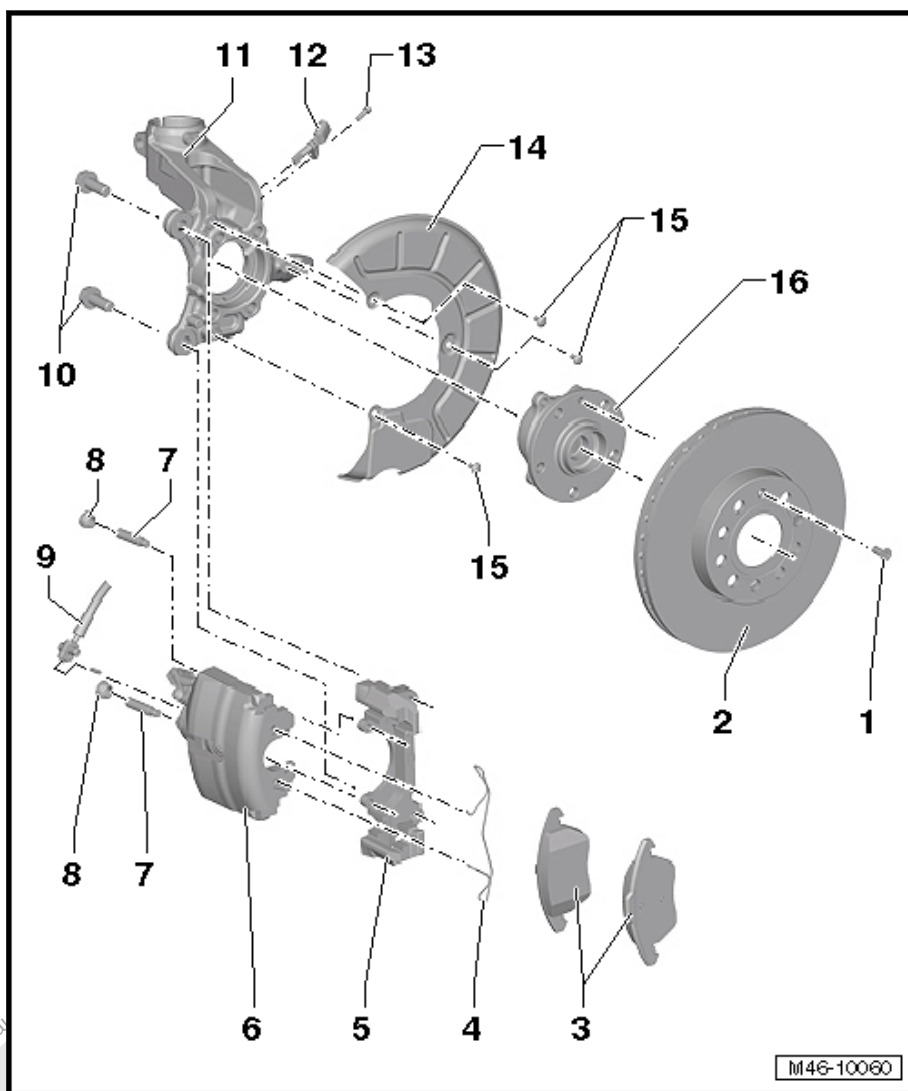
- ☐ 30 Nm

8 - Cap

9 - Brake Hose with Ring Connection and Banjo Bolt

- ☐ 35 Nm

10 - Bolt





- ☐ 200 Nm
- ☐ Clean if using again

11 - Wheel Bearing Housing

- ☐ With bolted brake carrier

12 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to [⇒ R5.3.1 Right Front ABS Wheel Speed Sensor G45 / Left Front ABS Wheel Speed Sensor G47, Removing and Installing](#), page 139 .

13 - Bolt

- ☐ 8 Nm

14 - Cover Plate

- ☐ Removing and installing. Refer to [⇒ P1.6.2 late, Removing and Installing, Brake Caliper FN 3](#), page 182 .

15 - Bolt

- ☐ 12 Nm

16 - Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

1.1.4 Overview - Front Brakes, FN3 15/16 Inch with Brake Pad Wear Indicator



Note

- ◆ *After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).*

1 - Bolt

- ☐ 8 Nm

2 - Brake Rotor

- ☐ Ventilated inside, 288 mm diameter, 15 inches
- ☐ Ventilated inside, 312 mm diameter, 16 inches
- ☐ 25 mm thickness
- ☐ Wear limit: 22 mm
- ☐ Replace both brake rotors on each axle
- ☐ Remove the brake caliper before removing

3 - Brake Pads

- ☐ 14 mm thick without backing plate
- ☐ With Left Front Brake Pad Wear Sensor - G34- / Right Front Brake Pad Wear Sensor - G35-
- ☐ When the wear limit is reached (limit: approximately 4 mm), the Brake System Indicator Lamp - K118- turns on in the instrument cluster.
- ☐ Wear limit 2 mm, replace both sides
- ☐ Removing and installing. Refer to ➤

[P1.2.2 ads, Removing and Installing, Brake Caliper FN3", page 164](#).

4 - Spring

- ☐ Insert in both holes of the brake caliper

5 - Brake Carrier

- ☐ Bolt to wheel bearing housing
- ☐ Removing and installing. Refer to ➤ [C1.4.1 arrier, Removing and Installing, Brake Caliper FN3", page 175](#).

6 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Removing and installing. Refer to ➤ [C1.3.2 aliper, Removing and Installing, Brake Caliper FN3", page 171](#).
- ☐ Servicing. Refer to ➤ [B1 rake Caliper", page 285](#).

7 - Guide Pin

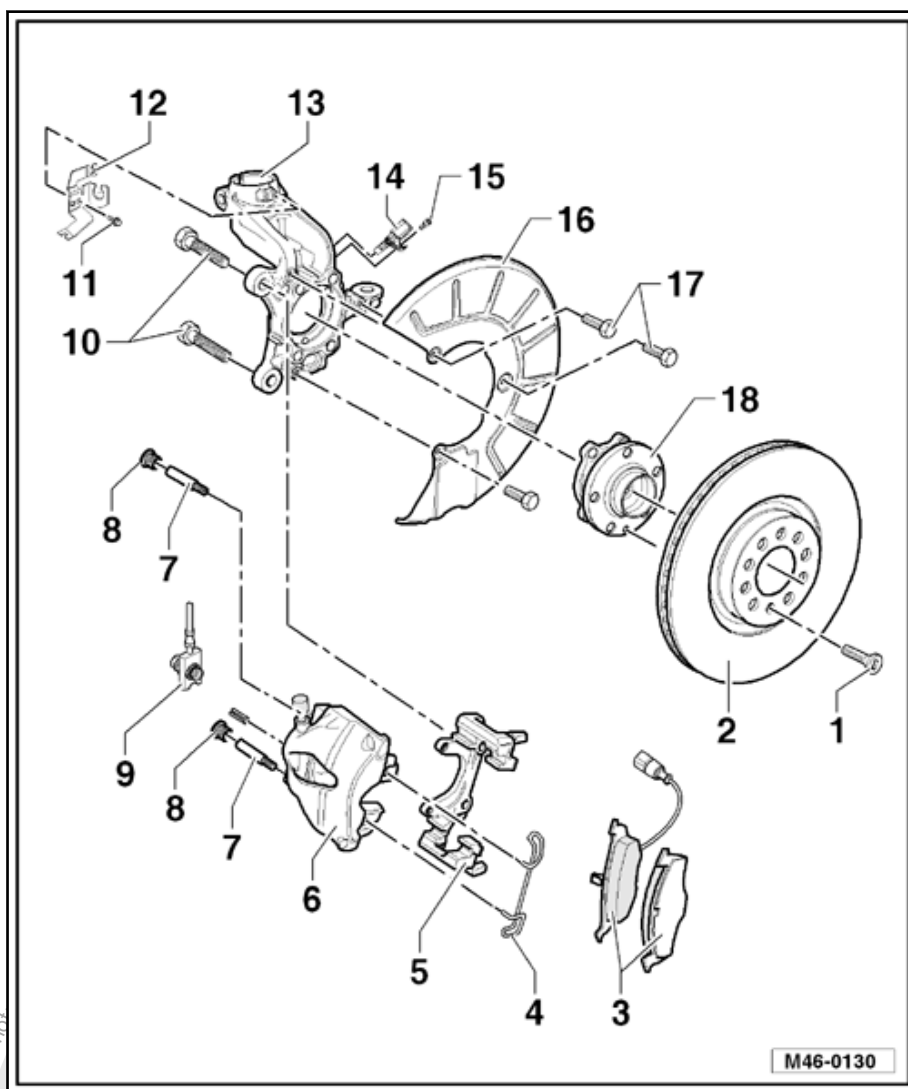
- ☐ 30 Nm

8 - Cap

- ☐ Remove

9 - Brake Hose with Ring Connection and Banjo Bolt

- ☐ 35 Nm





10 - Bolt

- ☐ 200 Nm
- ☐ Clean if using again

11 - Bolt

12 - Bracket

13 - Wheel Bearing Housing

- ☐ With bolted brake carrier

14 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to ➔ [R5.3.1 ight Front ABS Wheel Speed Sensor G45 / Left Front ABS Wheel Speed Sensor G47, Removing and Installing", page 139](#) .

15 - Bolt

- ☐ 8 Nm

16 - Cover Plate

- ☐ Removing and installing. Refer to ➔ [P1.6.2 late, Removing and Installing, Brake Caliper FN 3", page 182](#) .

17 - Bolt

- ☐ 12 Nm

18 - Wheel Bearing/Wheel Bearing Unit

- ☐ The ABS sensor ring is installed in the wheel bearing

1.2 Brake Pads, Removing and Installing

➔ [P1.2.1 ads, Removing and Installing, Brake Caliper FS III", page 161](#)

➔ [P1.2.2 ads, Removing and Installing, Brake Caliper FN3", page 164](#)

1.2.1 Brake Pads, Removing and Installing, Brake Caliper FS III

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Piston Resetting Tool -T10145-

Perform the Following:

Removing

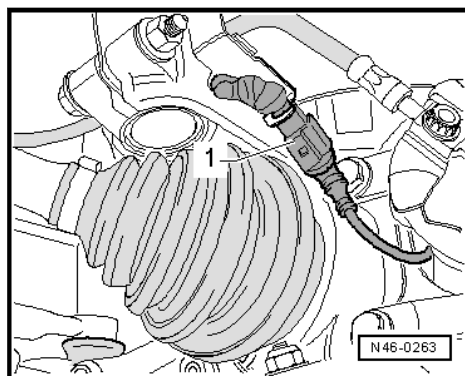
Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.

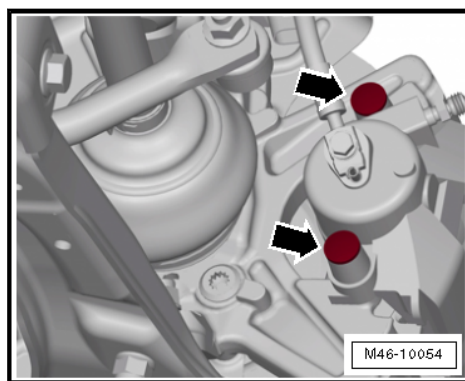


Vehicles with Brake Pad Wear Indicator

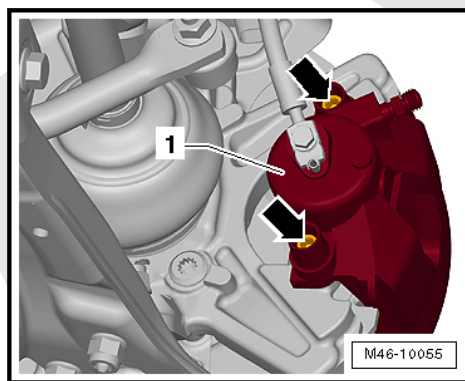


- Disconnect the connector -1- for the brake pad wear indicator.

Continuation for All Vehicles



- Remove the caps -arrows-.
- Loosen both guide pins -arrows- and remove them from the brake caliper -1-.



- Remove brake caliper -1- and secure with wire so that the weight of the brake caliper does not stress or damage the brake hose.
- Remove brake pads from brake caliper.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!



- Thoroughly clean the contact surface for the brake pads on the brake carrier and remove any corrosion.

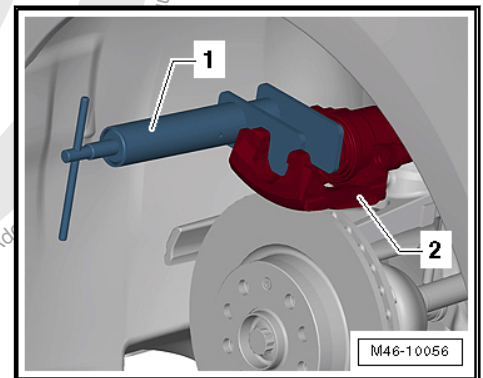
Only Use Mineral Spirits for Cleaning the Brake Caliper.

Installing

Install in reverse order of removal. Note the following:

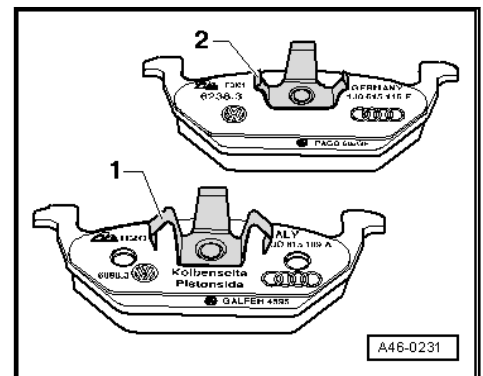
Extract the Brake Fluid from the Brake Fluid Reservoir before the Piston Resetting Tool -T10145- Pushes the Piston into the Cylinder. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially If the Brake Fluid Was Added Intermittently.

- Insert the Piston Resetting Tool -T10145- -1- in the brake caliper -2- and push the brake piston back.

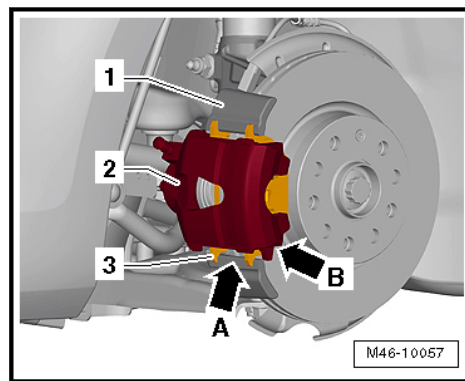


1 - Piston Resetting Tool -T10145-

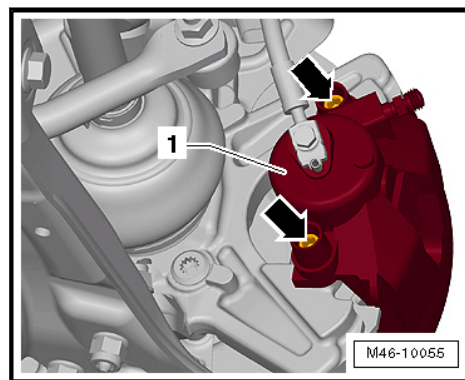
- Insert inner brake pad (piston side) -1- and outer brake pad -2- with retaining springs into brake caliper.



- ◆ Inside brake pad (piston side) with large 3-Finger clip -1-.
- ◆ Outside brake pad with small 3-finger clip -2- (black).
- First position the brake caliper -2- with brake pads -3- on the bottom -arrow A- of the brake carrier -1-.



- The pin -arrow B- on the brake caliper -1- must be behind the brake carrier guide -1-!
- Attach the brake caliper -1- to the brake carrier with both guide pins -arrows-.



- Install the caps.
- Install and fasten wheels.



Note

- ◆ After every brake pad replacement procedure, firmly depress the brake pedal several times when the vehicle is stationary to properly set the brake pads in their respective operating position.
- ◆ Check the brake fluid level after replacing the brake pad.

Tightening Specifications

- ◆ Refer to ⇒ [-1.1 Front Brakes-](#), page 153
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.2.2 Brake Pads, Removing and Installing, Brake Caliper FN3

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Piston Resetting Tool -T10145-

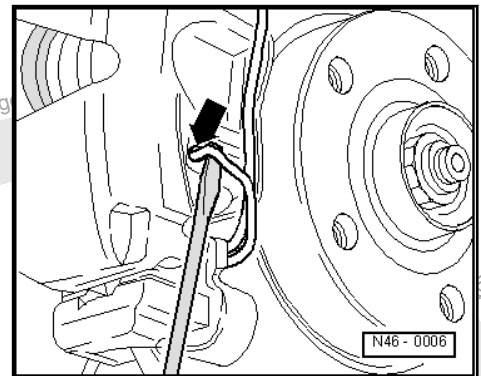


Perform the Following:

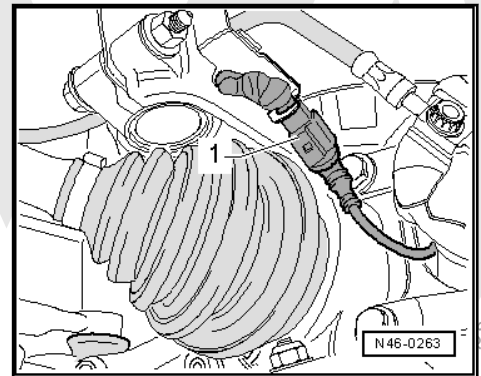
Removing

Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Using a screwdriver, pry off the brake pad spring from brake caliper -arrow- and remove.

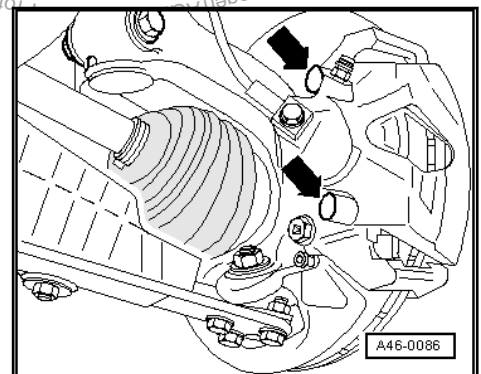


Vehicles with Brake Pad Wear Indicator

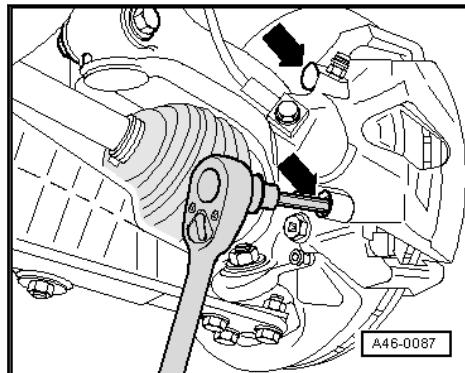


- Disconnect the connector -1- for the brake pad wear indicator.

Continuation for All Vehicles



- Remove the caps -arrows-.
- Loosen both guide pins -arrows- and remove them from the brake caliper.



- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the brake pad from brake caliper or from brake carrier.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

- Thoroughly clean the contact surface for the brake pads on the brake carrier and remove any corrosion.
- Clean the brake caliper, especially the adhesive surface for the brake pad, it must be free of residual adhesive and grease.

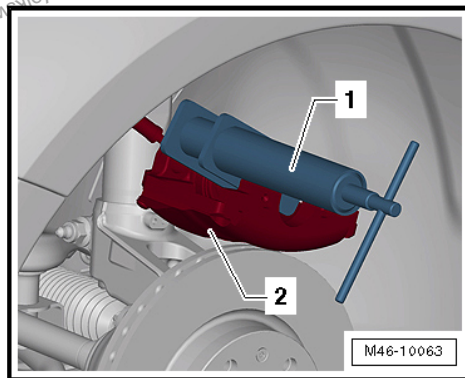
Only Use Mineral Spirits for Cleaning the Brake Caliper.

Installing

Install in reverse order of removal. Note the following:

Extract the Brake Fluid from the Brake Fluid Reservoir before the Piston Resetting Tool Pushes the Piston into the Cylinder. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially If the Brake Fluid Was Added Intermittently.

- Insert the Piston Resetting Tool -T10145- -1- in the brake caliper -2- and push the brake piston back.



- 1 - Piston Resetting Tool -T10145-
- Remove protective foil from the backing plate of outer brake pad.

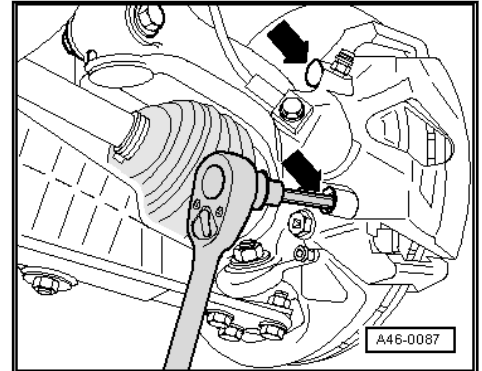


- Install the outer brake pad on the brake carrier.
- Insert the inner brake pad with spring in the brake caliper (piston).

When installing the brake caliper, make sure that the brake pad is not glued on to the brake caliper before the correct installation position is reached.

Do not damage the adhesive surface.

- Tighten the brake caliper to the brake carrier using both guide pins.



- Install both caps.
- Insert the spring in the brake caliper.
- Install the wheel and tighten.



Note

- ◆ *After every brake pad replacement procedure, firmly depress the brake pedal several times when the vehicle is stationary to properly set the brake pads in their respective operating position.*
- ◆ *Check the brake fluid level after replacing the brake pad.*

Tightening Specifications

- ◆ Refer to ➔ [-1.1 Front Brakes”, page 153](#)
- ◆ Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.3 Brake Caliper, Removing and Installing

➔ [C1.3.1 aliper, Removing and Installing, Brake Caliper FS III”, page 167](#)

➔ [C1.3.2 aliper, Removing and Installing, Brake Caliper FN3”, page 171](#)

1.3.1 Brake Caliper, Removing and Installing, Brake Caliper FS III

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Pedal Actuator -VAG1869/2-.

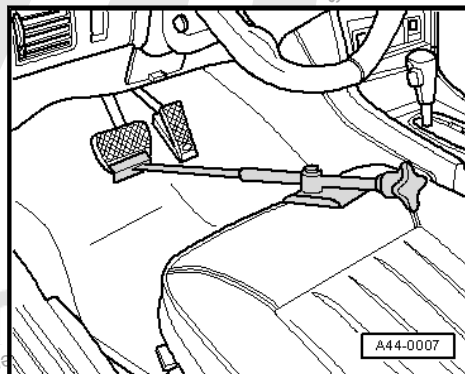


Perform the Following:

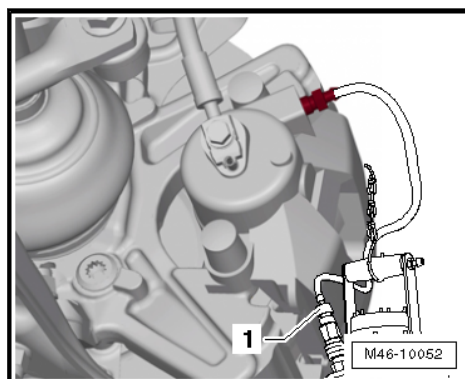
Removing

The Procedure Only Applies to the Replacement of or Subsequent Repair Work Done on the Brake Caliper.

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Insert the Brake Pedal Actuator -VAG1869/2-.

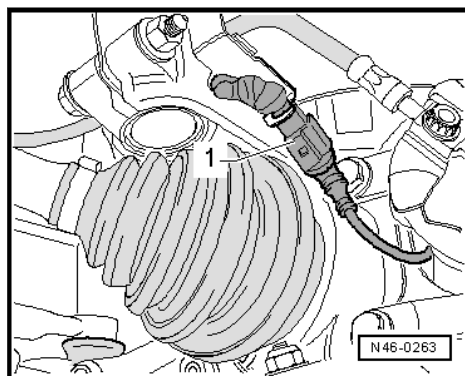


- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve.



- Open the breather valve.
- Close the breather valve and remove the bleeder bottle -1-.

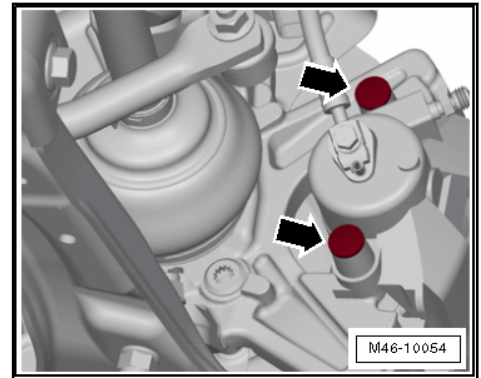
Vehicles with Brake Pad Wear Indicator



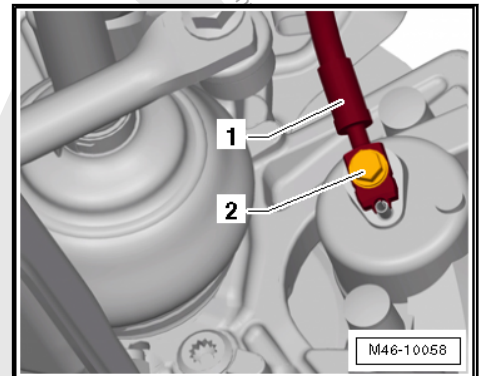
- Disconnect the connector -1- for the brake pad wear indicator.



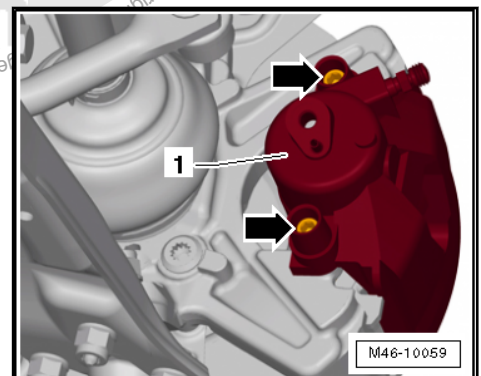
Continuation for All Vehicles



- Remove the caps -arrows- from the brake caliper bearing bushings.
- Remove the brake hose connection -1- with the banjo bolt -2- from the brake caliper.



- Seal off the brake line and threaded hole immediately using Plugs -1H0 698 311 A-.
- Loosen both guide pins -arrows- and remove them from the brake caliper.
- Remove the brake caliper from the brake carrier.
- Remove the brake pads from the brake caliper.



Installing

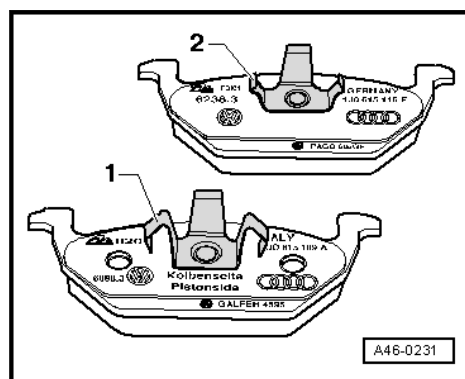
Install in reverse order of removal. Note the following:



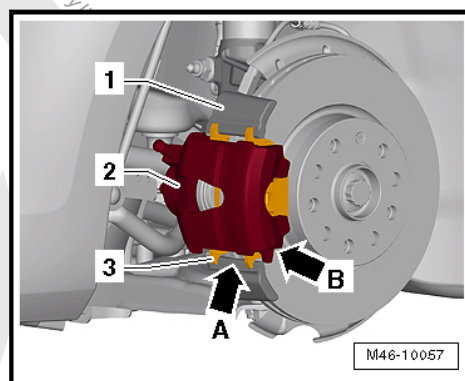
Note

Before installing, clean carefully and check for wear and damage.

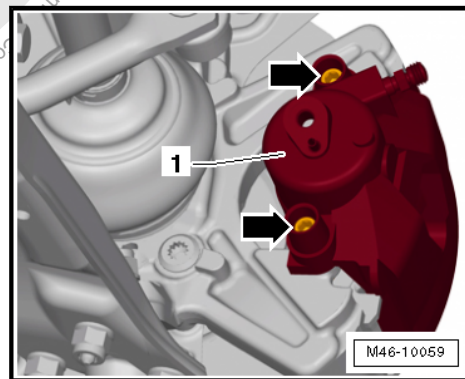
- The piston is pressed back.
- Insert inner brake pad (piston side) -1- and outer brake pad -2- with retaining springs into brake caliper.



- ◆ Inside brake pad (piston side) with large 3-Finger clip -1-.
- ◆ Outside brake pad with small 3-finger clip -2- (black).
- First position the brake caliper -1- with brake pads -3- on the bottom -arrow A- of the brake carrier -2-.



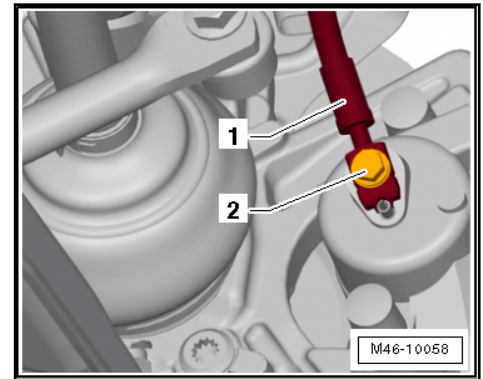
- The pin -arrow B- on the brake caliper -1- must be behind the brake carrier guide -2-!
- Attach the brake caliper -1- to the brake carrier with both guide pins -arrows-.



- Install both caps.



- Attach the brake hose -1- with the banjo bolt -2- to the brake caliper.



- Remove the Brake Pedal Actuator -VAG1869/2-.
- Bleed the brake system. Refer to [⇒ S6 ystem”, page 457](#) .
- Install and fasten wheels.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*

Tightening Specifications

- ◆ Refer to [⇒ -1.1 Front Brakes”, page 153](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.3.2 Brake Caliper, Removing and Installing, Brake Caliper FN3

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Pedal Actuator -VAG1869/2-.

Perform the Following:

Removing

The Procedure Only Applies to the Replacement of or Subsequent Repair Work Done on the Brake Caliper.

- Loosen the wheel bolts.
- Raise the vehicle
- Remove the wheel.



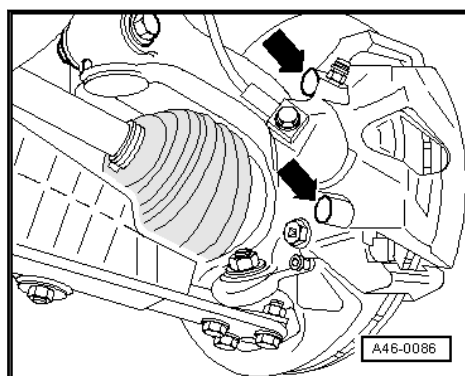
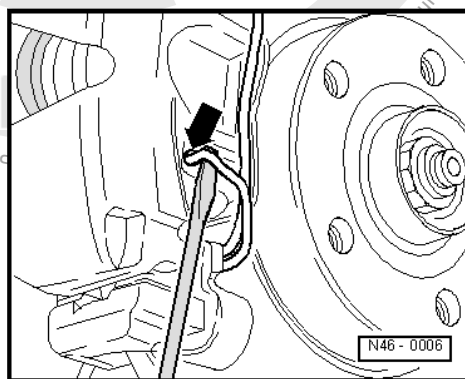
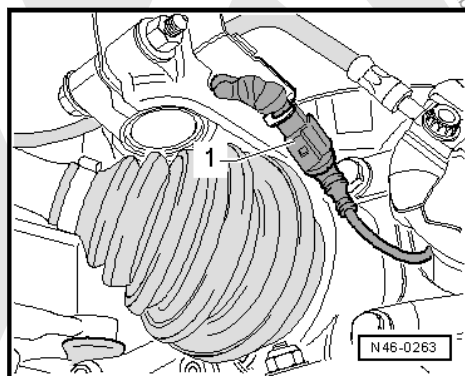
Vehicles with Brake Pad Wear Indicator

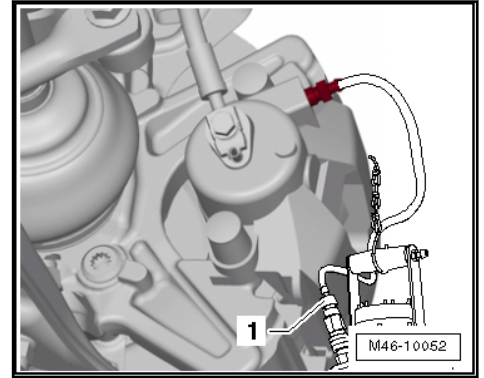
- Disconnect the connector -1- for the brake pad wear indicator.

Continuation for All Vehicles

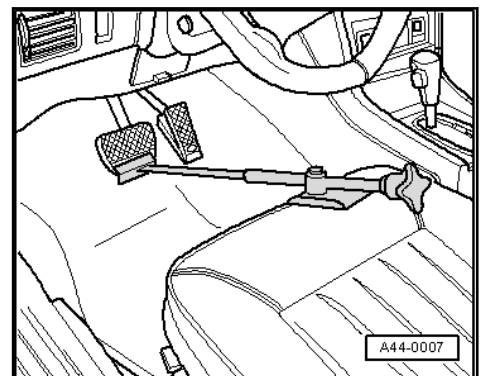
- Using a screwdriver, pry off the brake pad spring from brake caliper -arrow- and remove.
- Remove the caps -arrows-.

- Attach the bleeder bottle bleed hose -1- to the brake caliper breather valve.

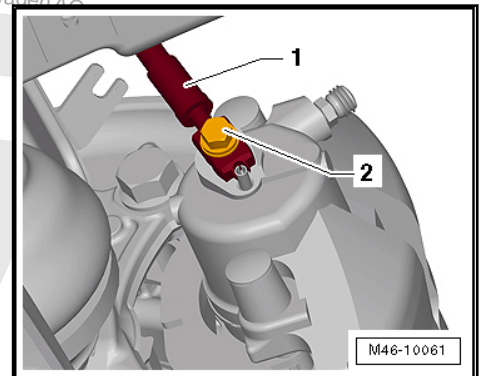




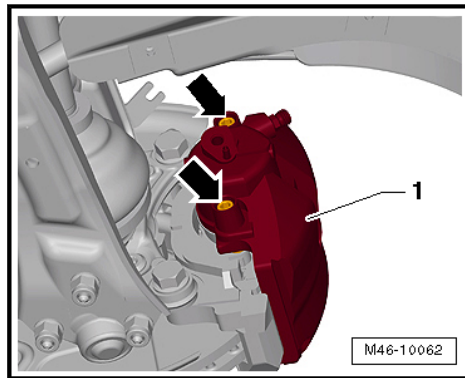
- Open the breather valve.
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Close the breather valve and remove the bleeder bottle.
- Remove the brake hose threaded connection -1- with the banjo bolt -2- from the brake caliper.



- Seal off the brake line and threaded hole immediately using Plugs -1H0 698 311 A-.
- Remove the guide pins -arrows- from the brake caliper -1-.



- Remove the brake caliper from the brake carrier.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

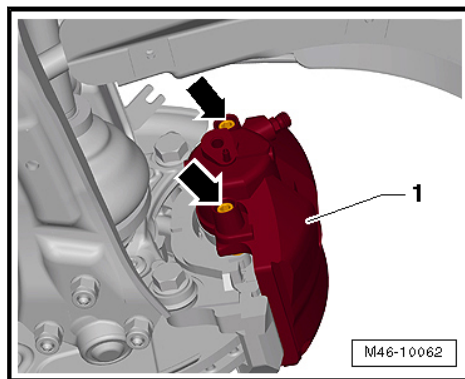
Before installing, clean carefully and check for wear and damage.

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.
- The piston is pressed back.
- The outer brake pad sits on brake carrier.
- Insert the inner brake pad with spring in the brake caliper (piston).

When installing the brake caliper, make sure that the brake pad is not glued on to the brake caliper before the correct installation position is reached.

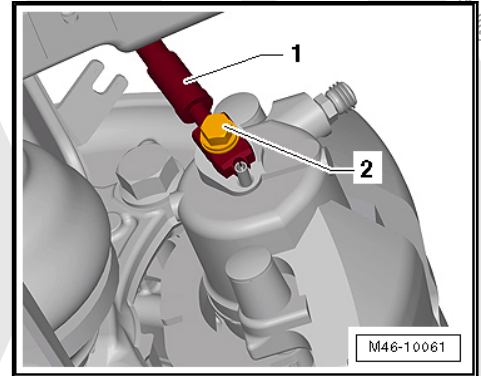
Do not damage the adhesive surface.

- Screw on and tighten the brake caliper -1- using guide pins -arrows-.





- Install both caps.
- Attach the brake hose -1- using banjo bolt -2- and tighten.



- Remove the Brake Pedal Actuator -VAG1869/2-.
- Insert the spring in the brake caliper.
- Bleed the brake system. Refer to ➤ [S6 system", page 457](#) .
- Install the wheel and tighten. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*

Tightening Specifications

- ◆ Refer to ➤ [-1.1 Front Brakes", page 153](#)
- ◆ Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.4 Brake Carrier, Removing and Installing

➤ [C1.4.1 Carrier, Removing and Installing, Brake Caliper FN3", page 175](#)

1.4.1 Brake Carrier, Removing and Installing, Brake Caliper FN3

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Piston Resetting Tool -T10145-

Perform the Following:

Removing

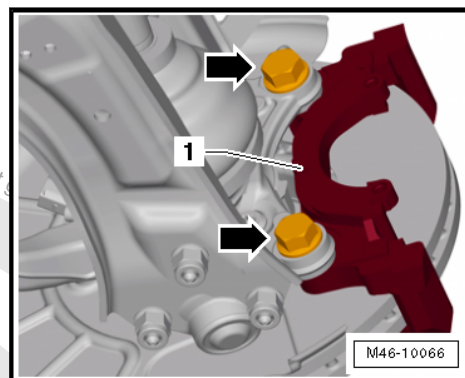
Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.



- Remove the wheel.
- Remove the brake pads. Refer to ⇒ [P1.2.2 ads, Removing and Installing, Brake Caliper FN3", page 164](#).
- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the threaded connection -arrows- from the brake carrier -1-.



- Remove the brake carrier -1-.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

Before installing, clean carefully and check for wear and damage.

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.

If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially if the Brake Fluid Was Added Intermittently.

- Install the wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*

Tightening Specifications

- ◆ Refer to [⇒ -1.1 Front Brakes", page 153](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.5 Replacing the brake rotor

[⇒ R1.5.1 otor, Removing and Installing, Brake Caliper FS III", page 177](#)

[⇒ R1.5.2 otor, Removing and Installing, Brake Caliper FN 3", page 179](#)

1.5.1 Brake Rotor, Removing and Installing, Brake Caliper FS III

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Piston Resetting Tool -T10145-
- ◆ Torque Wrench 1783 - 2-10Nm -VAG1783-

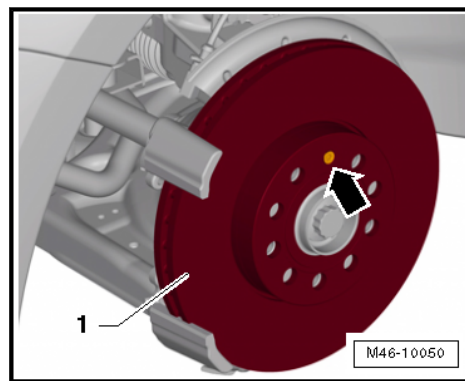
Perform the Following:

Removing

Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake pads. Refer to [⇒ P1.2.1 ads, Removing and Installing, Brake Caliper FS III", page 161](#) .
- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the bolt -arrow-.
- Remove the brake rotor -1-.



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.
- Clean the brake rotor.

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

- ♦ *Carefully clean before installing.*
- ♦ *Check for wear and damage, make sure the dimensions are correct and that the brake surface is flawless.*
- ♦ *Replace on both sides of axle if worn.*

If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially If the Brake Fluid Was Added Intermittently.

- Install the wheel and tighten. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ♦ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ♦ *Check the brake fluid level.*

Tightening Specifications

- ♦ Refer to ➤ [-1.1 Front Brakes](#), page 153



- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.5.2 Brake Rotor, Removing and Installing, Brake Caliper FN 3

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Piston Resetting Tool -T10145-
- ◆ Torque Wrench 1783 - 2-10Nm -VAG1783-

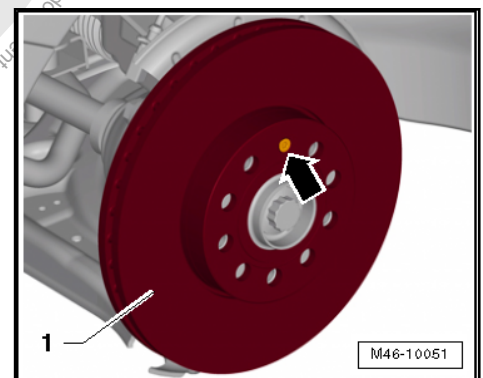
Perform the Following:

Removing

Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake carrier. Refer to ⇒ [C1.4.1 Carrier, Removing and Installing, Brake Caliper FN3](#), page 175 .
- Remove the bolt -arrow-.



- Remove the brake rotor -1-.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

- ♦ *Carefully clean before installing.*
- ♦ *Check for wear and damage, make sure the dimensions are correct and that the brake surface is flawless.*
- ♦ *Replace on both sides of axle if worn.*
- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.

If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially if the Brake Fluid Was Added Intermittently.

- Install the wheel and tighten. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ♦ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ♦ *Check the brake fluid level.*

Tightening Specifications

- ♦ Refer to ➔ **-1.1 Front Brakes**, [page 153](#)
- ♦ Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.6 Brake Shield, Removing and Installing

⇒ **P1.6.1 late, Removing and Installing, Brake Caliper FS III**, [page 180](#)

⇒ **P1.6.2 late, Removing and Installing, Brake Caliper FN 3**, [page 182](#)

1.6.1 Cover Plate, Removing and Installing, Brake Caliper FS III

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm -VAG1331-
- ♦ Piston Resetting Tool -T10145-

Perform the Following:

Removing

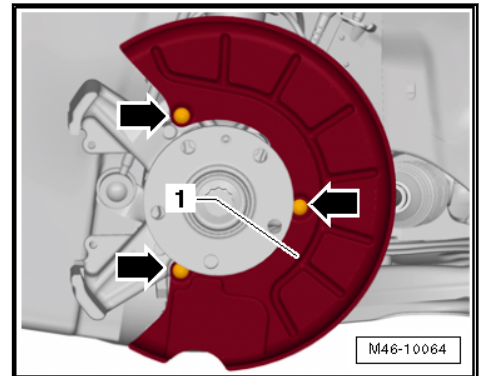
Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.



- Remove the brake rotor. Refer to ➔ [R1.5.1 rotor, Removing and Installing, Brake Caliper FS III](#), page 177.
- Remove the threaded connection -arrows- from the cover plate -1-.



- Remove cover plate -1-.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

Before installing, clean carefully and check for wear and damage.

If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially If the Brake Fluid Was Added Intermittently.

- Install the wheel and tighten. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ◆ ***With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.***
- ◆ ***Check the brake fluid level.***

Tightening Specifications

- ◆ Refer to ➔ [-1.1 Front Brakes](#), page 153



- ♦ Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

1.6.2 Cover Plate, Removing and Installing, Brake Caliper FN 3

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm -VAG1331-
- ♦ Torque Wrench 1332 40-200Nm -VAG1332-
- ♦ Piston Resetting Tool -T10145-

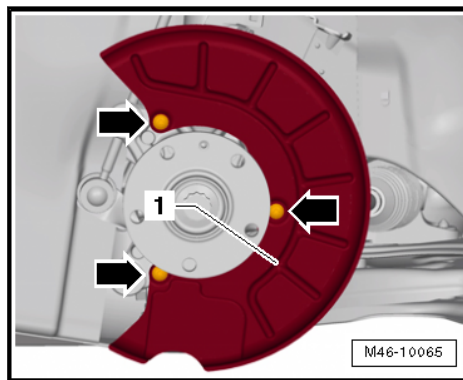
Perform the Following:

Removing

Label the Brake Pads That Will Be Used Again When Removing. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake carrier. Refer to ➤ [C1.4.1 carrier, Removing and Installing, Brake Caliper FN3", page 175](#) .
- Remove the brake rotor. Refer to ➤ [R1.5.2 rotor, Removing and Installing, Brake Caliper FN 3", page 179](#) .
- Remove the threaded connection -arrows- from the cover plate -1-.



- Remove the cover plate -1-.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brakes.

Installing

Install in reverse order of removal. Note the following:



Note

Before installing, clean carefully and check for wear and damage.

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.

If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially if the Brake Fluid Was Added Intermittently.

- Install the wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*

Tightening Specifications

- ◆ Refer to ⇒ [1.1 Front Brakes", page 153](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



2 Rear Brakes

- ⇒ [-2.1 Rear Brakes", page 184](#)
- ⇒ [P2.2 ads, Removing and Installing", page 200](#)
- ⇒ [C2.3 aliper, Removing and Installing", page 208](#)
- ⇒ [C2.4 arrier, Removing and Installing", page 218](#)
- ⇒ [R2.5 otor, Removing and Installing", page 222](#)
- ⇒ [S2.6 hoes, Removing and Installing", page 224](#)
- ⇒ [B2.7 rake, Resetting", page 228](#)
- ⇒ [S2.8 hield, Removing and Installing", page 228](#)

2.1 Overview - Rear Brakes

- ⇒ [-2.1.1 Drum Brake", page 184](#)
- ⇒ [-2.1.2 Drum Brakes", page 186](#)
- ⇒ [-2.1.3 Brake Cylinder", page 188](#)
- ⇒ [-2.1.4 Twist Beam Rear Suspension, Rear Brakes Bosch ZOH BIR 38", page 188](#)
- ⇒ [-2.1.5 Twist Beam Rear Suspension, Rear Brakes CI 38", page 191](#)
- ⇒ [-2.1.6 Multi-Link Rear Axle, Rear Brakes Bosch ZOH BIR 38", page 194](#)
- ⇒ [-2.1.7 Multi-Link Rear Axle, Rear Brakes CI 38", page 197](#)

2.1.1 Overview - Drum Brake



Note

- ◆ *After disassembling the drum brake, depress brake pedal firmly several times with vehicle stationary so that the brake pads are properly seated in their normal operating position.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- to relieve pressure before removing a brake cylinder or disconnecting a brake hose.*



1 - Axle Beam

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

2 - Parking Brake Cable

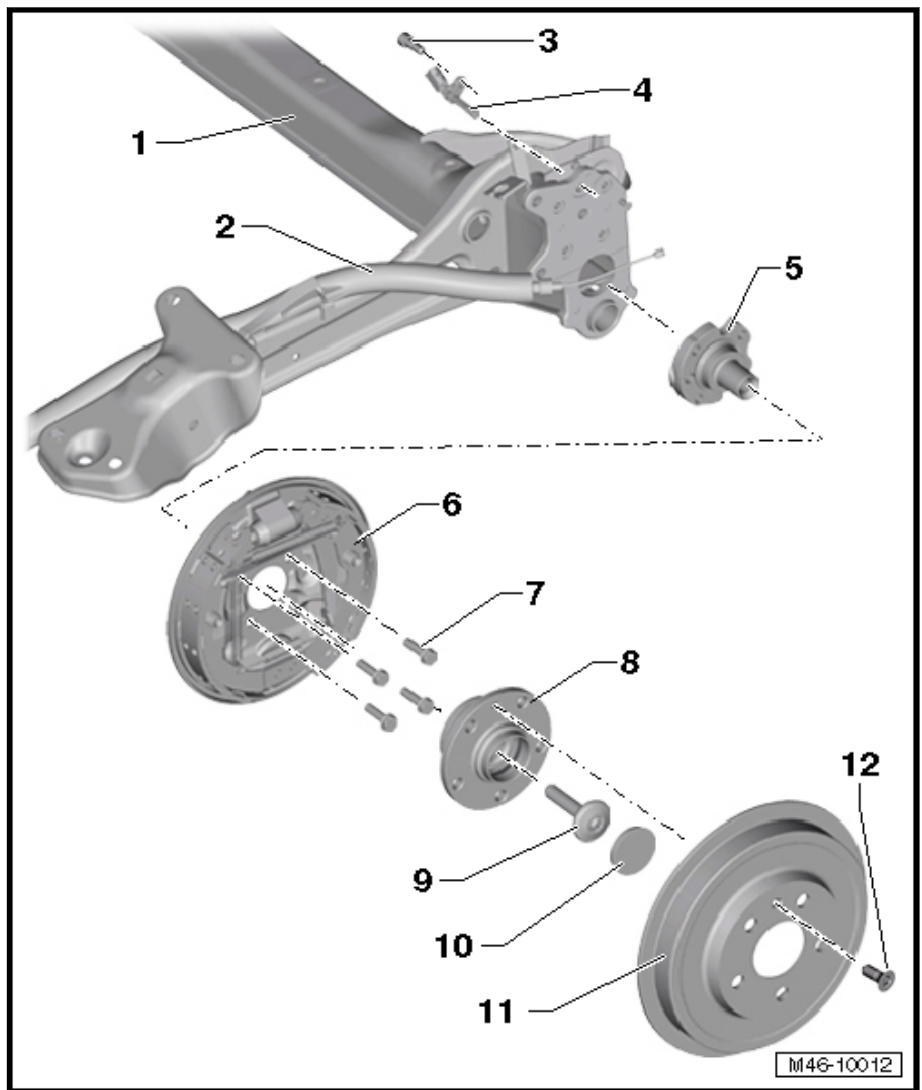
- ☐ Removing and installing. Refer to ➤ [B3.3.1 rake Cable, Removing and Installing, Drum Brake](#), page 238 .
- ☐ Refer to ➤ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 for adjusting.
- ☐ Allocation. Refer to the Parts Catalog.

3 - Bolt

- ☐ 8 Nm

4 - Right Rear ABS Wheel Speed Sensor -G44-/Left Rear ABS Wheel Speed Sensor -G46-

- ☐ Removing and installing. Refer to ➤ [5.2.1 Rear Axle Speed Sensor, Twist Beam Rear Suspension with Drum Brake](#), page 137 .
- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.



5 - Axle Stub

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

6 - Brake Carrier with Brake Shoes

- ☐ Overview. Refer to ➤ [2.1.2 Drum Brakes](#), page 186 .
- ☐ Minimum brake pad thickness 2.5 mm
- ☐ Checking thickness. Refer to ➤ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.
- ☐ Set back before removing brake drum. Refer to ➤ [B2.7 rake, Resetting](#), page 228 .
- ☐ Brake Carrier, Removing and installing. Refer to ➤ [C2.4.1 arrier, Removing and Installing, Drum Brake](#), page 218 .
- ☐ Brake Shoes, Removing and installing. Refer to ➤ [S2.6 hoes, Removing and Installing](#), page 224 .
- ☐ Allocation. Refer to the Parts Catalog.

7 - Bolt

- ☐ 30 Nm + 90°
- ☐ Quantity: 4
- ☐ Always replace if removed

8 - Wheel Bearing Unit

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

9 - Screw





- ☐ Always replace if removed
- ☐ Allocation. Refer to the Parts Catalog.

10 - Cap

- ☐ Removing and installing. Refer to ⇒ [Suspension, Wheels, Steering; Rep. Gr. 42.](#)
- ☐ Allocation. Refer to the Parts Catalog.

11 - Brake Drum

- ☐ Drum brake diameter: 230 mm
- ☐ Wear limit: 231.5 mm
- ☐ Set back before removing brake drum. Refer to ⇒ [B2.7 rake, Resetting", page 228](#) .
- ☐ Removing and installing. Refer to ⇒ [D2.5.2 rum, Removing and Installing", page 223](#) .
- ☐ Clean carefully and check for wear and damage, make sure the dimensions are correct and that the brake surface is perfect.
- ☐ Allocation. Refer to the Parts Catalog.

12 - Bolt

- ☐ 8 Nm

2.1.2 Overview - Drum Brakes



1 - Spring Plate

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

2 - Pressure Spring

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

3 - Brake Shoe

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).
- ☐ Allocation. Refer to the Parts Catalog.

4 - Wedge Tool

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

5 - Upper Return Spring

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

6 - Contact Spring

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

7 - Wheel Brake Cylinder

- ☐ Checking for leaks. Refer to ➤ [C6.5.2 cylinder, Checking for Leaks", page 464](#).
- ☐ Removing and installing. Refer to ➤ [C2.3.3 cylinder, Removing and Installing, Drum Brake", page 216](#).

8 - Bolt

- ☐ 8 Nm

9 - Spring Pin

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).

10 - Brake Carrier

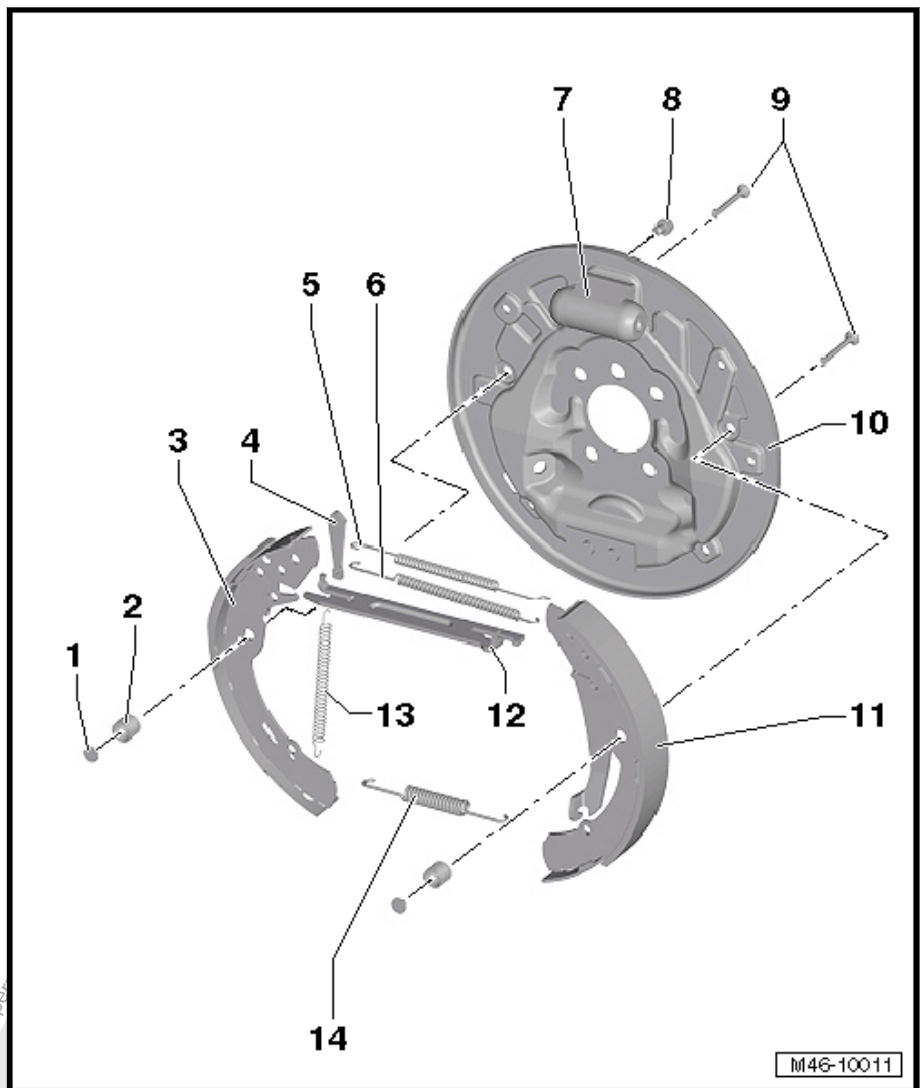
- ☐ Removing and installing. Refer to ➤ [C2.4.1 arrier, Removing and Installing, Drum Brake", page 218](#).
- ☐ Grease the contact surface with Grease -G 000 650-.

11 - Brake Shoe with Parking Brake Lever

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).
- ☐ Adjusting the parking brake. Refer to ➤ [B3.4.1 brake, Adjusting, Drum Brake", page 252](#).
- ☐ Allocation. Refer to the Parts Catalog.

12 - Push Rod

- ☐ Removing and installing. Refer to ➤ [S2.6 hoses, Removing and Installing", page 224](#).
- ☐ Grease the contact surface with Grease -G 000 650-.





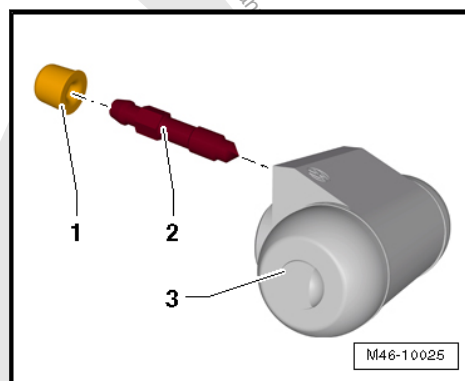
13 - Tension Spring

- ❑ Removing and installing. Refer to [⇒ S2.6 hoes, Removing and Installing", page 224](#) .

14 - Lower Return Spring

- ❑ Removing and installing. Refer to [⇒ S2.6 hoes, Removing and Installing", page 224](#) .
- ❑ Grease the contact surface with Grease -G 000 650-.

2.1.3 Overview - Brake Cylinder



- 1 - Dust cap; push onto breather valve
- 2 - Breather valve, 8 Nm; Apply a thin coat of Assembly Paste -G 052 150 A2- to the threads before screwing in.
- 3 - Wheel brake cylinder



Note

Replace the brake cylinder if there are leaks or damage.

2.1.4 Overview - Twist Beam Rear Suspension, Rear Brakes Bosch ZOH BIR 38



Note

- ◆ After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.
- ◆ Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.
- ◆ Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).



1 - Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to ➤ [R5.4.2 ight Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Disc Brakes, Removing and Installing", page 142](#).

2 - Bolt

- ☐ 8 Nm

3 - Axle Beam

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

4 - Axle Stub

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

5 - Brake Cover Plate

- ☐ Removing and installing. Refer to ➤ [S2.8.1 hield, Removing and Installing, Twist Beam Rear Suspension", page 228](#).

6 - Screw

- ☐ 30 Nm + 90° turn
- ☐ Always replace if removed
- ☐ Quantity: 4

7 - Wheel Bearing Unit

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

8 - Bolt

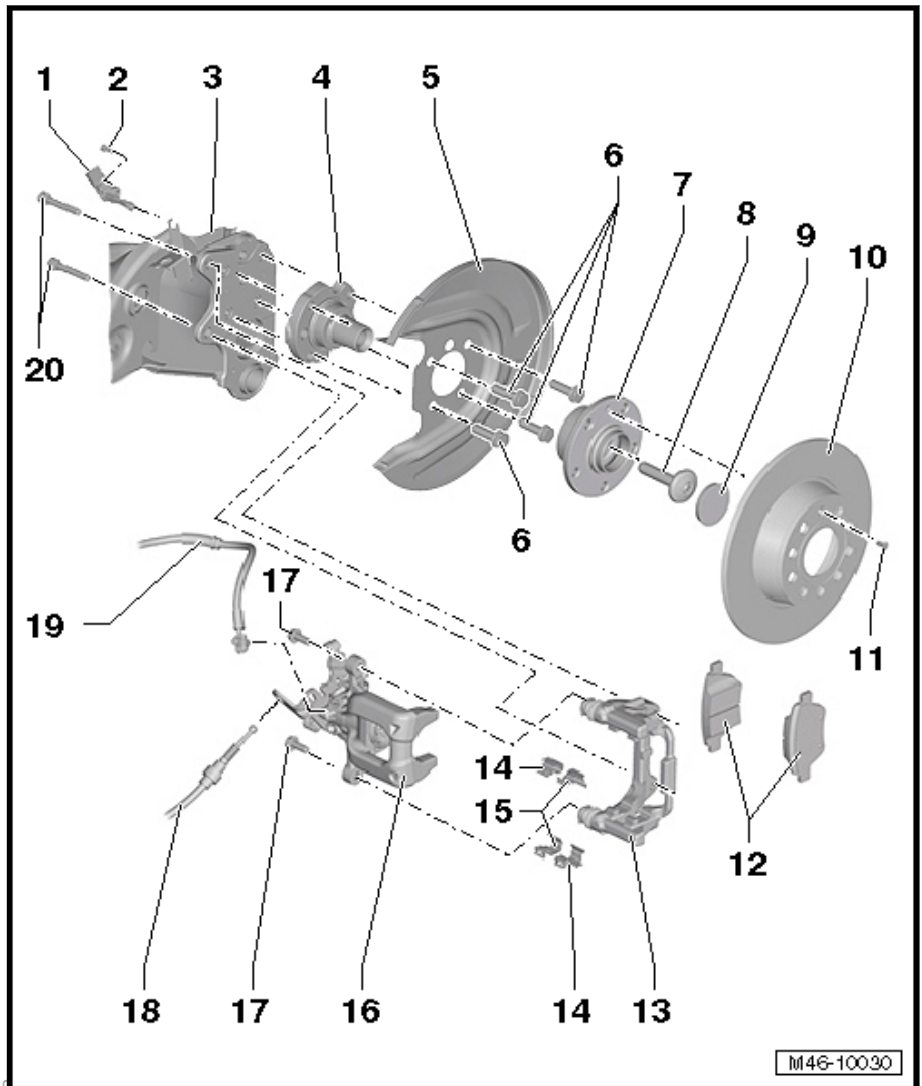
- ☐ Always replace if removed
- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

9 - Cap

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

10 - Brake Rotor

- ☐ 272 mm diameter
- ☐ Thickness: 10 mm





- ☐ Wear limit: 8 mm
- ☐ Removing and installing. Refer to ⇒ [R2.5.1 rotor, Removing and Installing", page 222](#) .
- ☐ Checking for maintenance. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.
- ☐ Allocation. Refer to the Parts Catalog.
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

11 - Bolt

- ☐ 8 Nm
- ☐ For securing the brake rotor

12 - Brake Pads

- ☐ Thickness: 12 mm without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Always replace on both sides of the axle
- ☐ Check the thickness. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking for maintenance.
- ☐ Removing and installing. Refer to ⇒ [P2.2 ads, Removing and Installing", page 200](#) .

13 - Brake Carrier with Different Guide Pins and Cap

- ☐ Removing and installing. Refer to ⇒ [C2.4.2 arrier, Removing and Installing, Disc Brake", page 220](#) .
- ☐ Supplied with sufficient grease on guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.

14 - Brake Pad Retaining Plate

- ☐ Always replace when pads are replaced
- ☐ The brake pad retaining plates are different, they can only be installed diagonally to each other.
- ☐ Allocation. Refer to the Parts Catalog.

15 - Brake Pad Retaining Plate

- ☐ Always replace when pads are replaced
- ☐ The brake pad retaining plates are different, they can only be installed diagonally to each other.
- ☐ Allocation. Refer to the Parts Catalog.

16 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Removing and installing. Refer to ⇒ [C2.3.1 aliper, Removing and Installing, Rear Brakes Bosch ZOH BIR 38", page 208](#) .
- ☐ Servicing. Refer to ⇒ [B2 rake Caliper", page 294](#) .
- ☐ Adjust the parking brake after performing service work or replacing it. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .

17 - Bolt

- ☐ 35 Nm
- ☐ Always replace if removed
- ☐ Self-locking
- ☐ Quantity: 2

18 - Parking Brake Cable

- ☐ Both tabs must be engaged in the brake caliper bracket
- ☐ Parking Brake, Adjusting. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .

19 - Brake Hose

- ☐ 35 Nm
- ☐ With banjo bolt and seals

20 - Bolt



- ☐ 90 Nm +90° turn
- ☐ Always replace if removed
- ☐ Quantity: 2

2.1.5 Overview - Twist Beam Rear Suspension, Rear Brakes CI 38



Note

- ◆ *After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).*



1 - Bolt

- 8 Nm

2 - Right Rear ABS Wheel Speed Sensor -G44-/Left Rear ABS Wheel Speed Sensor -G46-

- Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- Removing and installing. Refer to ➤ [R5.4.2 ight Rear ABS Wheel Speed Sensor G44 / Left Rear ABS Wheel Speed Sensor G46 on Twist Beam Rear Suspension with Disc Brakes, Removing and Installing", page 142](#).

3 - Axle Beam

- Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

4 - Axle Stub

- Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.

5 - Brake Cover Plate

- Removing and installing. Refer to ➤ [S2.8.1 hield, Removing and Installing, Twist Beam Rear Suspension", page 228](#).

6 - Bolt

- 30 Nm + 90° turn
- Always replace if removed
- Quantity: 4

7 - Wheel Bearing Unit

- Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- Allocation. Refer to the Parts Catalog.

8 - Screw

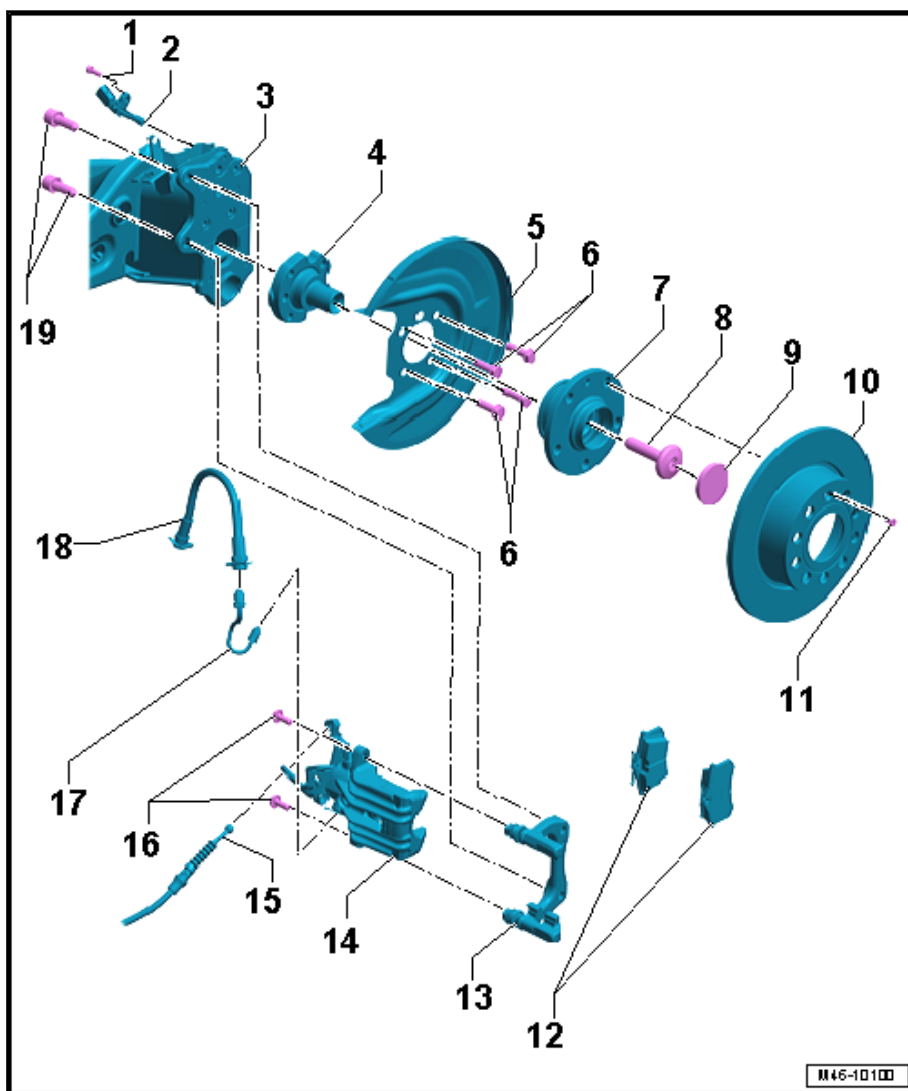
- Always replace if removed
- Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- Allocation. Refer to the Parts Catalog.

9 - Cap

- Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- Allocation. Refer to the Parts Catalog.

10 - Brake Rotor

- 272 mm diameter
- Thickness: 10 mm





- ☐ Wear limit: 8 mm
- ☐ Removing and installing. Refer to ⇒ [R2.5.1 rotor, Removing and Installing](#), page 222 .
- ☐ Checking for maintenance. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.
- ☐ Allocation. Refer to the Parts Catalog.
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

11 - Bolt

- ☐ 8 Nm
- ☐ For securing the brake rotor

12 - Brake Pads

- ☐ Thickness: 12 mm without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Check the thickness. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking for maintenance.
- ☐ Always replace on both sides of the axle
- ☐ Removing and installing. Refer to ⇒ [P2.2 ads, Removing and Installing](#), page 200 .

13 - Brake Carrier with Different Guide Pins and Cap

- ☐ Removing and installing. Refer to ⇒ [C2.4.2 arrier, Removing and Installing, Disc Brake](#), page 220 .
- ☐ Supplied with sufficient grease on guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.

14 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Overview. Refer to ⇒ [-2.1 Rear Brake Caliper](#), page 294 .
- ☐ Removing and installing. Refer to ⇒ [C2.3 aliper, Removing and Installing](#), page 208 .
- ☐ Servicing. Refer to ⇒ [C2.2 aliper Piston, Removing and Installing](#), page 298 .
- ☐ Adjust the parking brake after performing service work or replacing it. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .

15 - Parking Brake Cable

- ☐ Both tabs must be engaged in the brake caliper bracket
- ☐ Parking Brake, Adjusting. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .
- ☐ Removing and installing. Refer to ⇒ [B3.3 rake Cable, Removing and Installing](#), page 238 .

16 - Bolt

- ☐ 35 Nm
- ☐ Always replace if removed
- ☐ Self-locking
- ☐ Quantity: 2

17 - Brake Line

- ☐ 14 Nm

18 - Brake Hose

19 - Screw

- ☐ 90 Nm +90° turn
- ☐ Always replace if removed
- ☐ Quantity: 2



2.1.6 Overview - Multi-Link Rear Axle, Rear Brakes Bosch ZOH BIR 38



Note

- ◆ *After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).*



1 - Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-.
- ☐ Removing and installing. Refer to ➤ [R5.4.3 Right Rear ABS Wheel Speed Sensor G44/ Left Rear ABS Wheel Speed Sensor G46 on Multi-Link Rear Axle, Removing and Installing](#), page 143.

2 - Bolt

- ☐ 8 Nm

3 - Bolt

- ☐ 90 Nm and 90° turn
- ☐ Always replace if removed
- ☐ If necessary, remove using Multipoint Socket -T10035-. Refer to ➤ [Fig. "Multipoint Socket -T10035-"](#), page 197.

4 - Axle Beam

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

5 - Brake Cover Plate

- ☐ Removing and installing. Refer to ➤ [S2.8.2 Right Rear Brake Removing and Installing, Multi-Link Rear Axle](#), page 230.

6 - Bolt

- ☐ 12 Nm
- ☐ M 6 x 12
- ☐ Quantity: 4

7 - Wheel Bearing Unit

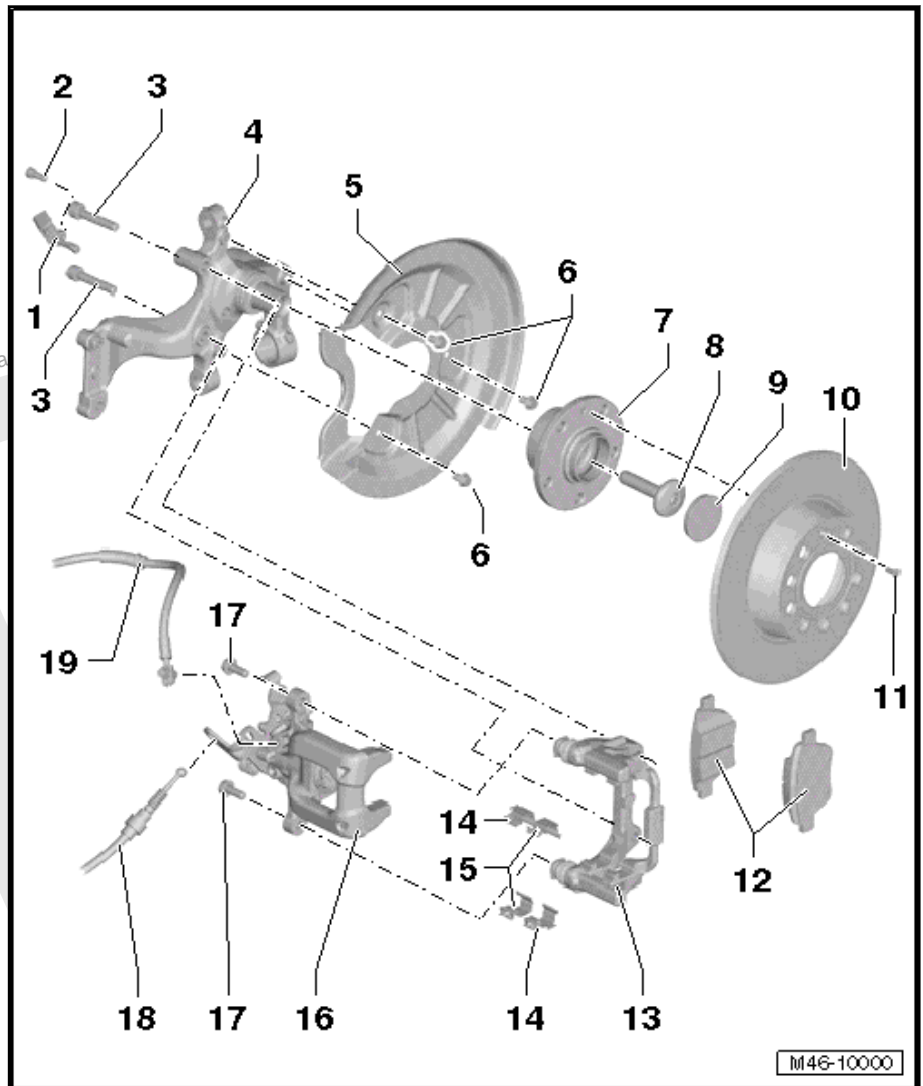
- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

8 - Screw

- ☐ Always replace if removed
- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

9 - Cap

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.





10 - Brake Rotor

- ☐ 272 mm diameter
- ☐ Thickness: 10 mm
- ☐ Wear limit: 8 mm
- ☐ Removing and installing. Refer to [⇒ R2.5.1 rotor, Removing and Installing", page 222](#) .
- ☐ Checking for maintenance. Refer to [⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking](#).
- ☐ Allocation. Refer to the Parts Catalog.
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

11 - Bolt

- ☐ 8 Nm
- ☐ For securing the brake rotor

12 - Brake Pads

- ☐ Thickness: 12 mm without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Check the thickness. Refer to [⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking for maintenance](#).
- ☐ Always replace on both sides of the axle
- ☐ Removing and installing. Refer to [⇒ P2.2 ads, Removing and Installing", page 200](#) .

13 - Brake Carrier with Different Guide Pins and Cap

- ☐ Removing and installing. Refer to [⇒ C2.4.2 arrier, Removing and Installing, Disc Brake", page 220](#) .
- ☐ Supplied with sufficient grease on guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.

14 - Brake Pad Retaining Plate

- ☐ Always replace when pads are replaced
- ☐ The brake pad retaining plates are different, they can only be installed diagonally to each other.
- ☐ Allocation. Refer to the Parts Catalog.

15 - Brake Pad Retaining Plate

- ☐ Always replace when pads are replaced
- ☐ The brake pad retaining plates are different, they can only be installed diagonally to each other.
- ☐ Allocation. Refer to the Parts Catalog.

16 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Removing and installing. Refer to [⇒ C2.3.1 aliper, Removing and Installing, Rear Brakes Bosch ZOH BIR 38", page 208](#) .
- ☐ Servicing. Refer to [⇒ B2 rake Caliper", page 294](#) .
- ☐ Adjust the parking brake after performing service work or replacing it. Refer to [⇒ B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .

17 - Bolt

- ☐ 35 Nm
- ☐ Self-locking
- ☐ Always replace if removed
- ☐ Quantity: 2

18 - Parking Brake Cable

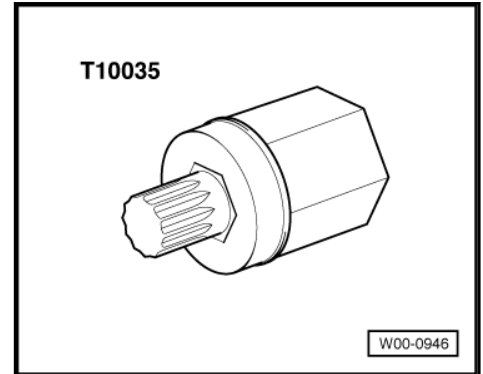
- ☐ Both tabs must be engaged in the brake caliper bracket
- ☐ Parking Brake, Adjusting. Refer to [⇒ B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .

19 - Brake Hose



- ❑ 35 Nm
- ❑ With banjo bolt and seals

Multipoint Socket -T10035-



2.1.7 Overview - Multi-Link Rear Axle, Rear Brakes CI 38



Note

- ◆ After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.
- ◆ Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.
- ◆ Install the Brake Pedal Actuator -VAG1869/2- before removing a brake caliper or disconnecting a brake hose (doing so reduces the pressure).





1 - Bolt

- ☐ 90 Nm and 90° turn
- ☐ Always replace if removed
- ☐ If necessary, remove using Multipoint Socket -T10035-. Refer to ➤ [Fig. "Multipoint Socket -T10035-"](#), page 199.

2 - Bolt

- ☐ 8 Nm

3 - Right Rear ABS Wheel Speed Sensor -G44-/Left Rear ABS Wheel Speed Sensor -G46-

- ☐ Before inserting the sensor, clean the inner surface of the hole and coat with Hot Bolt Paste -G 052 112 A3-
- ☐ Removing and installing. Refer to ➤ [R5.4.3 Right Rear ABS Wheel Speed Sensor G44/ Left Rear ABS Wheel Speed Sensor G46 on Multi-Link Rear Axle, Removing and Installing](#), page 143.

4 - Axle Beam

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

5 - Brake Cover Plate

- ☐ Removing and installing. Refer to ➤ [S2.8.2 Field, Removing and Installing, Multi-Link Rear Axle](#), page 230.

6 - Bolt

- ☐ 12 Nm
- ☐ M 6 x 12
- ☐ Quantity: 4

7 - Wheel Bearing Unit

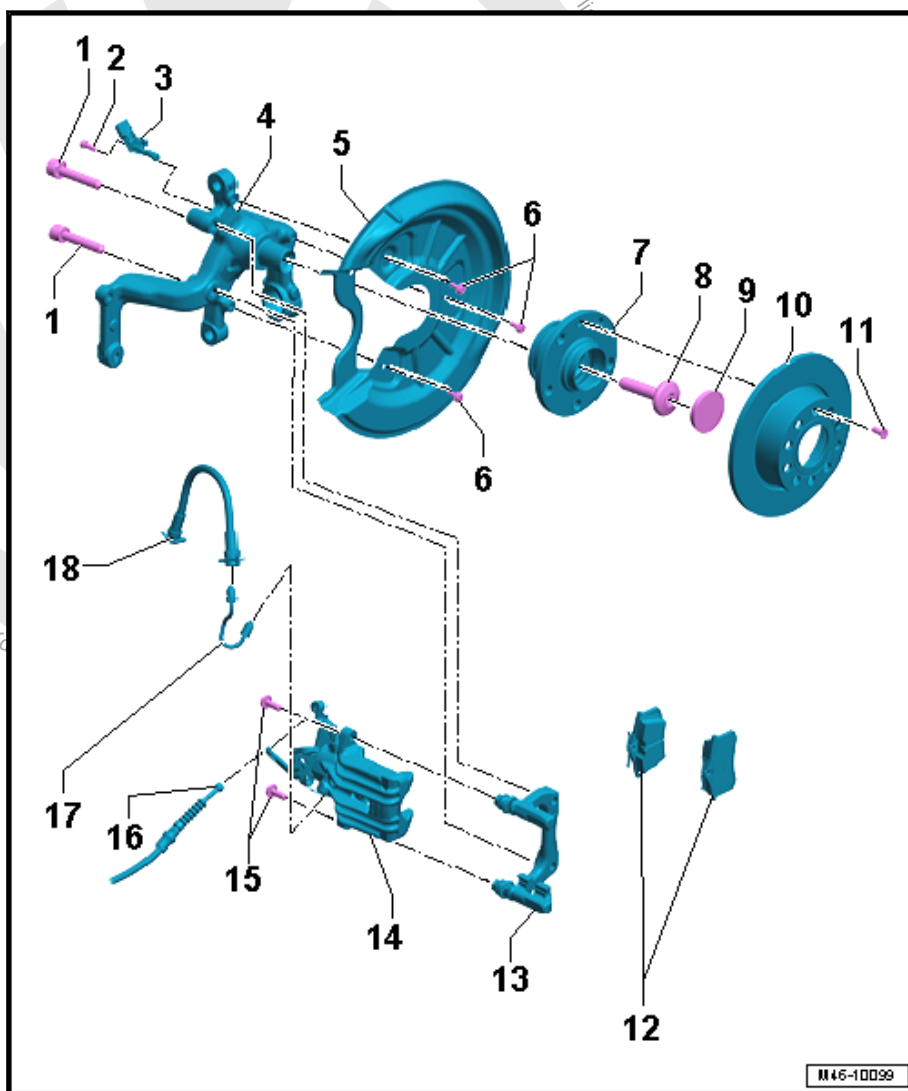
- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

8 - Bolt

- ☐ Always replace if removed
- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.

9 - Cap

- ☐ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 42.
- ☐ Allocation. Refer to the Parts Catalog.





10 - Brake Rotor

- ☐ 272 mm diameter
- ☐ Thickness: 10 mm
- ☐ Wear limit: 8 mm
- ☐ Removing and installing. Refer to ⇒ [R2.5.1 otor, Removing and Installing", page 222](#) .
- ☐ Checking for maintenance. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking.
- ☐ Allocation. Refer to the Parts Catalog.
- ☐ Do not use excessive force to separate the brake rotors from the wheel hub. Use rust remover, if necessary, otherwise the brake rotors could be damaged.

11 - Bolt

- ☐ 8 Nm
- ☐ For securing the brake rotor

12 - Brake Pads

- ☐ Thickness: 12 mm without backing plate
- ☐ Wear limit: 2 mm without backing plate
- ☐ Check the thickness. Refer to ⇒ Maintenance; Booklet 20.1; Procedure Descriptions; Brake Pad Thickness and Front and Rear Brake Rotor Condition, Checking for maintenance.
- ☐ Always replace on both sides of the axle
- ☐ Removing and installing. Refer to ⇒ [P2.2.2 ads, Removing and Installing, Rear Brakes CI 38", page 203](#) .

13 - Brake Carrier with Different Guide Pins and Cap

- ☐ Removing and installing. Refer to ⇒ [C2.4.2 arrier, Removing and Installing, Disc Brake", page 220](#) .
- ☐ Supplied with sufficient grease on guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.

14 - Brake Caliper

- ☐ Do not remove the brake hose when changing the brake pads.
- ☐ Overview. Refer to ⇒ [-2.1 Rear Brake Caliper", page 294](#) .
- ☐ Removing and installing. Refer to ⇒ [C2.3 aliper, Removing and Installing", page 208](#) .
- ☐ Servicing. Refer to ⇒ [C2.2.2 aliper Piston, Removing and Installing, CI 38 Rear Brakes", page 300](#) .
- ☐ Adjust the parking brake after performing service work or replacing it. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .

15 - Bolt

- ☐ 35 Nm
- ☐ Always replace if removed
- ☐ Self-locking
- ☐ Quantity: 2

16 - Parking Brake Cable

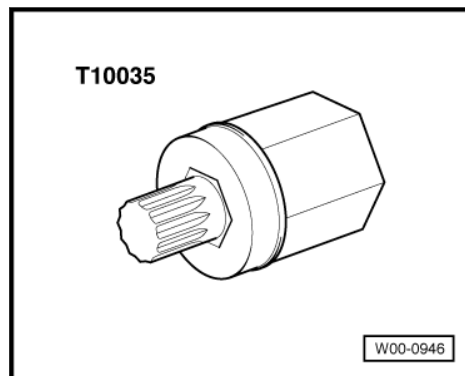
- ☐ Both tabs must be engaged in the brake caliper bracket
- ☐ Parking Brake, Adjusting. Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes", page 253](#) .
- ☐ Removing and installing. Refer to ⇒ [B3.3 rake Cable, Removing and Installing", page 238](#) .

17 - Brake Line

- ☐ 14 Nm

18 - Brake Hose

Multipoint Socket -T10035-



2.2 Brake Pads, Removing and Installing

⇒ [P2.2.1 ads, Removing and Installing, Rear Brakes Bosch ZOH BIR 38", page 200](#)

⇒ [P2.2.2 ads, Removing and Installing, Rear Brakes CI 38", page 203](#)

2.2.1 Brake Pads, Removing and Installing, Rear Brakes Bosch ZOH BIR 38

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Caliper Tool -T10165-

Perform the Following:

Removing

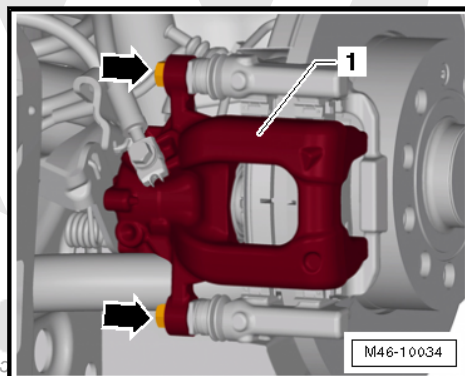
When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.



WARNING

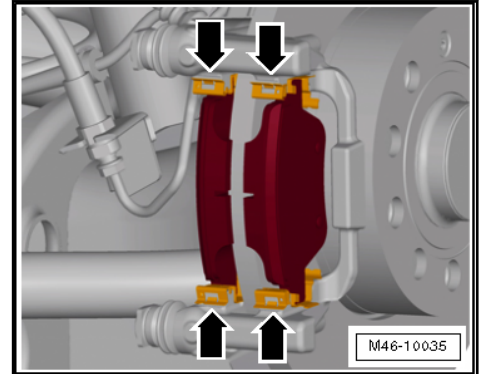
Adjusting the brake piston is only permitted using the Brake Caliper Tool -T10165-.

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Counterhold at the guide pin and remove the bolts -arrows- from the brake caliper -1-.





- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the brake pads and brake pad retaining plates -arrows-.



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake Caliper.

Installing

Install in reverse order of removal. Note the following:



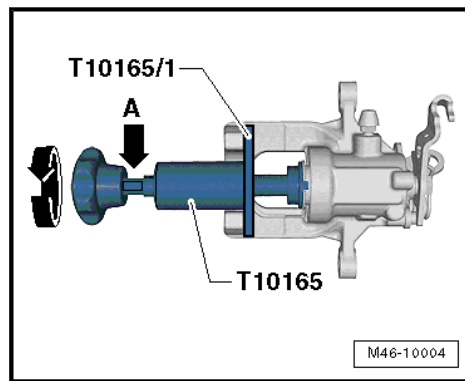
Note

- ◆ *The repair kit has four self-locking hex bolts for securing the brake caliper. Always use these.*
- ◆ *After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.*
- ◆ *Check the brake fluid level after replacing the brake pad.*
- Thoroughly clean the contact surfaces for brake pad retaining plates (brake pads) on the brake carrier and remove any corrosion.
- Clean the brake caliper.

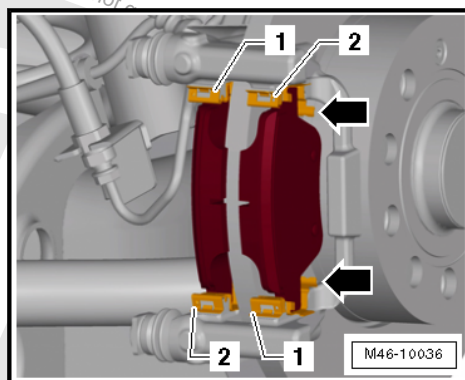
If using the brake pads again, install the marked pads in the same location.

Before Pushing Back the Pistons, Extract Some of the Brake Fluid out of the Brake Fluid Reservoir Using a Bleeder Bottle. Otherwise the Brake Fluid Will Overflow and Cause Damage, Especially If the Brake Fluid Was Added Intermittently.

- Turn the thumbwheel from the Brake Caliper Tool -T10165- to the right to install the piston. Be careful not to damage the piston collar.



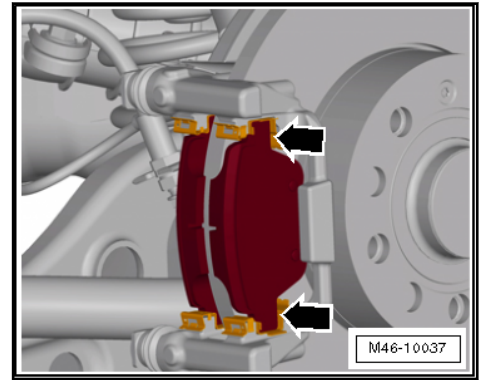
- Use the Resetting & Extracting Tool - Plate -T10165/1- to assist in installing.
- ◆ Insert the Brake Caliper Tool -T10165- so that the collar is resting on the Resetting & Extracting Tool - Plate -T10165/1-
- ◆ For pistons that are difficult to move, an open end wrench (size 13 mm) can be positioned at the appropriate wrench surfaces -arrow A-.
- Insert the brake pad retaining plates -1 and 2- in the brake carrier.



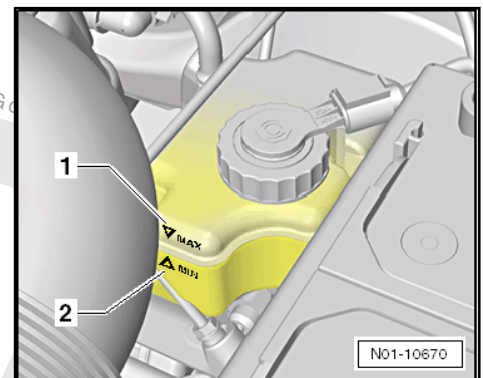
Note

The brake pad retaining plates -1 and 2- are different. They can only be installed diagonally to each other.

- Install the brake pad retaining plates -1 and 2- so that the tabs -arrows- on both sides of the brake carrier face outward.
- Insert brake pads in brake carrier.
- Make sure the brake pads are seated in the brake pad retaining plates -arrows-.



- Secure the brake caliper using new self-locking bolts.
- After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.
- Install the wheel and tighten.
- Check the brake fluid level.
- The brake fluid level must be between both markings -1 and 2-.



Tightening Specification

- ◆ Refer to ⇒ [-2.1 Rear Brakes”, page 184](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires

2.2.2 Brake Pads, Removing and Installing, Rear Brakes CI 38

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Caliper Tool -T10165-



Removing

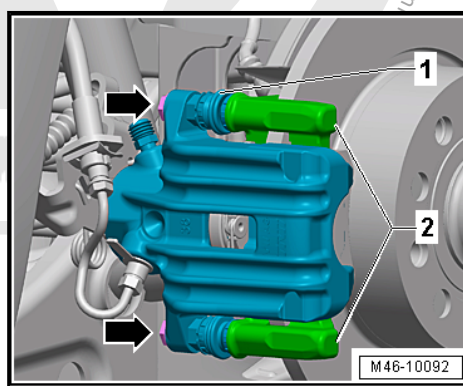
When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.



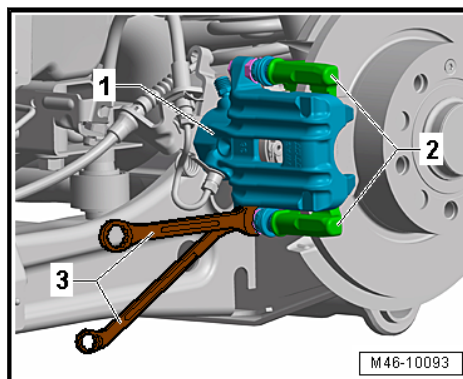
WARNING

Adjusting the brake piston is only permitted using the Brake Caliper Tool -T10165-.

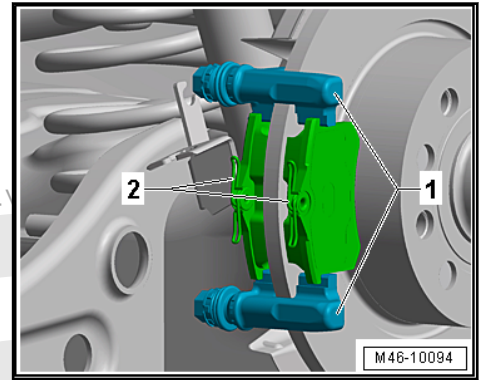
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake caliper -1- from the brake carrier -2-.



- Remove the bolts -arrows-.
- While doing so counterhold the guide pin on the brake carrier -2- with a suitable wrench -3-.



- Remove brake caliper -1- and secure with wire so that the weight of the brake caliper does not stress or damage the brake hose.
- Remove the brake pads -2- from the brake carrier -1-.



Cleaning:

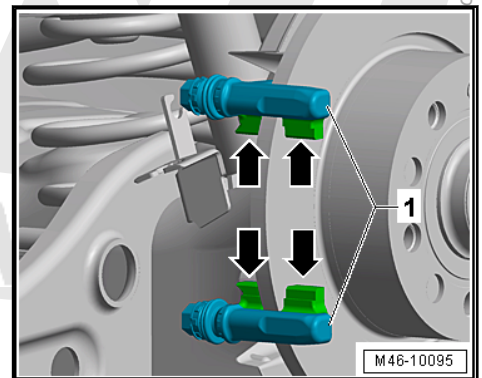


WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake Caliper.

- Thoroughly clean the contact surfaces -arrows- for the brake pads on the brake carrier -1- and remove any corrosion.



Installing

Install in reverse order of removal. Note the following:



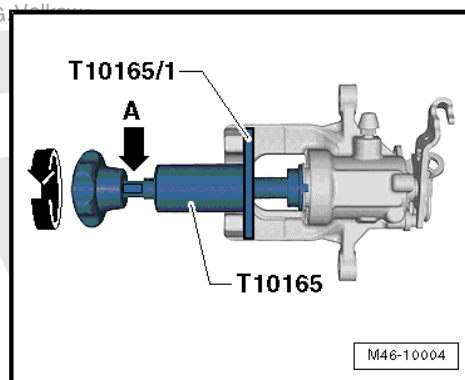
Note

- ◆ *The repair kit has four self-locking hex bolts for securing the brake caliper. Always use these.*
- ◆ *After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.*
- ◆ *Check the brake fluid level after replacing the brake pad.*

If using the brake pads again, install the marked pads in the same location.



Piston, Pressing Back:



WARNING

Before pushing back the pistons, extract some of the brake fluid out of the brake fluid reservoir using a bleeder bottle. Otherwise the brake fluid will overflow and cause damage, especially if the brake fluid was added intermittently.

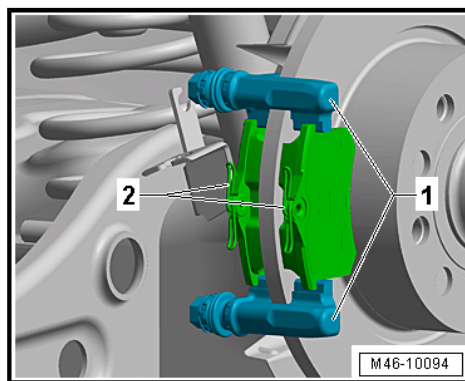
- Insert the Brake Caliper Tool -T10165- so that the collar is resting on the Resetting & Extracting Tool - Plate -T10165/1-
- Use the Resetting & Extracting Tool - Plate -T10165/1- to assist in installing.
- Turn the thumbwheel on the Brake Caliper Tool -T10165- to the right to install the piston. Be careful not to damage the piston collar.



Note

For pistons that are difficult to move, an open end wrench (size 13 mm) can be positioned at the appropriate wrench surfaces -arrow A-.

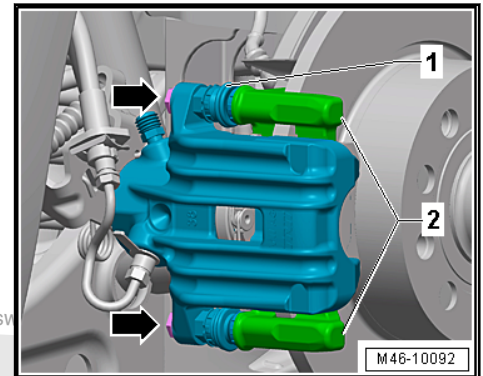
- Check the caps for damage and correct seating -item 9- ➔ [Item 9 \(page 297\)](#) .
- Check the guide pins for ease of movement -item 8- ➔ [Item 8 \(page 297\)](#) .
- Remove protective foil on brake pad backing plates.
- Install the brake pads -2- in the brake carrier -1-.



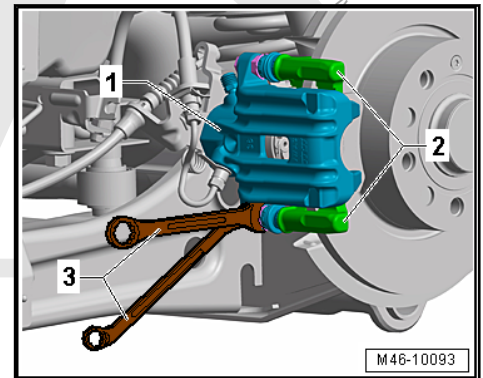


When installing brake caliper, make sure that brake pads are not affixed to brake caliper before the correct installation position has been reached.

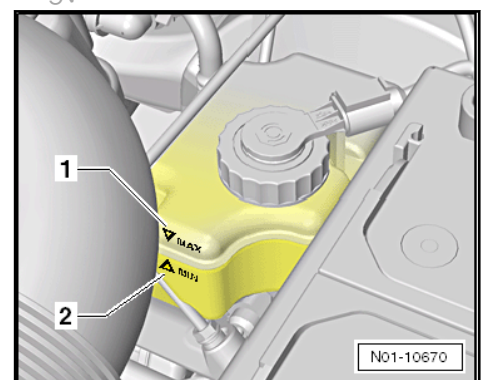
- Tighten the brake caliper -1- to the brake carrier -2-.



- Use new self-locking bolts -arrows-.
- Tighten the brake caliper -1- to the brake carrier -2-.



- While tightening counterhold the guide pin with a suitable wrench -3-.
- After every brake pad replacement, firmly press down on the brake pedal several times with vehicle stationary so that the brake pads are properly set in their respective operating position.
- Check the brake fluid level.
- The brake fluid level must be between both markings -1 and 2-.



Tightening Specifications

- ◆ Refer to ➔ [-2.1 Rear Brakes](#), page 184



- ◆ Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44;
Wheels and Tires.

2.3 Brake Caliper, Removing and Installing

⇒ C2.3.1 aliper, Removing and Installing, Rear Brakes Bosch ZOH BIR 38", page 208

⇒ C2.3.2 aliper, Removing and Installing, Rear Brakes CI 38", page 211

⇒ C2.3.3 ylinder, Removing and Installing, Drum Brake", page 216

2.3.1 Brake Caliper, Removing and Installing, Rear Brakes Bosch ZOH BIR 38

Special tools and workshop equipment required

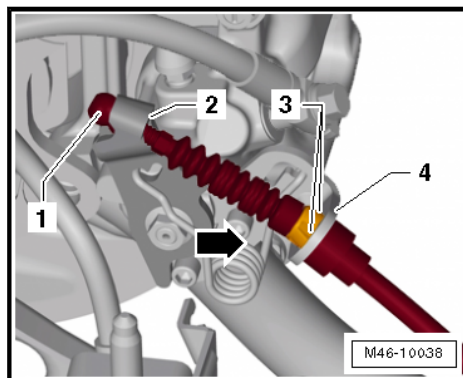
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Pedal Actuator -VAG1869/2-

Perform the Following:

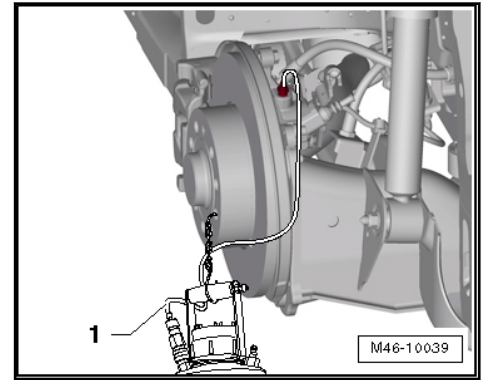
Removing

The Procedure Only Applies to the Replacement of or Subsequent Repair Work Done on the Brake Caliper.

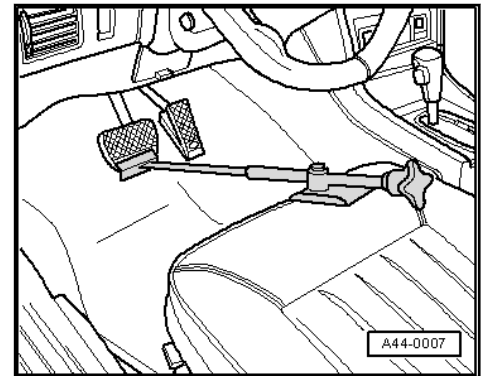
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Push the lever on the brake caliper -2- in the direction of -arrow-.



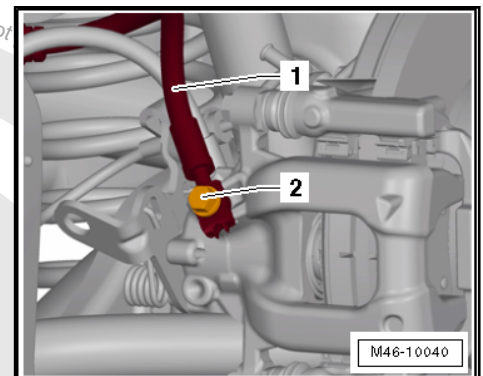
- Disengage the parking brake cable -1- from the lever on the brake caliper -2-.
- Press the tabs -3- together.
- Remove the parking brake cable -1- from the bracket -4- on the brake caliper.
- Connect the bleeder bottle bleed hose -1- to the brake caliper bleed valve and open the breather valve.



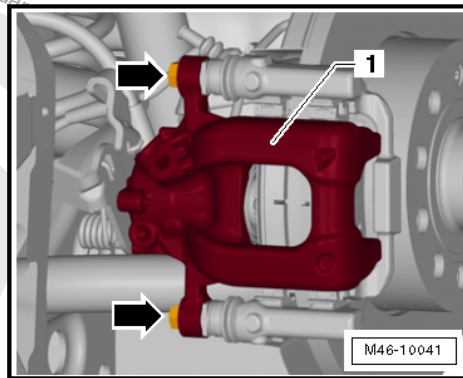
- Insert the Brake Pedal Actuator -VAG1869/2-.



- Close the breather valve and remove the bleeder bottle.
- Remove the brake hose -1- with the banjo bolt -2- from the brake caliper.



- Seal off the brake line and threaded hole immediately using Plugs -1H0 698 311 A-.
- Counterhold at the guide pin and remove the bolts -arrows- from the brake caliper -1-.



- Remove the brake caliper from the brake carrier.

Cleaning:



WARNING

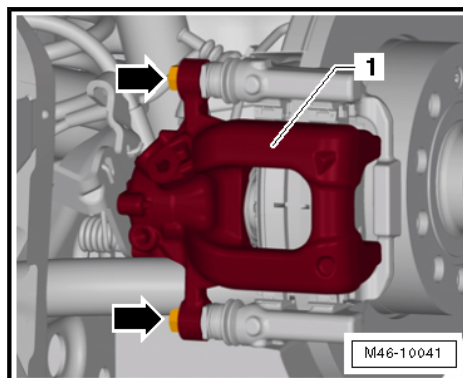
Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

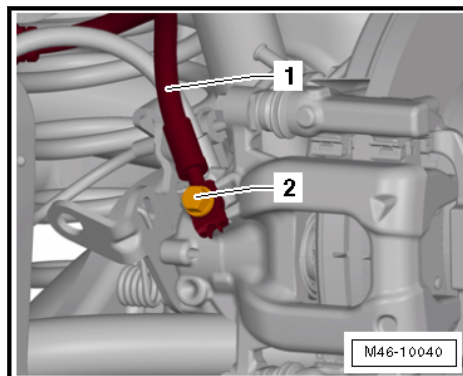
Installing

Install in reverse order of removal. Note the following:

- The piston is pressed back.
- Brake pads sit in springs on the brake carrier.
- Attach the brake caliper -1- to the brake carrier using new self-locking bolts -arrows-.

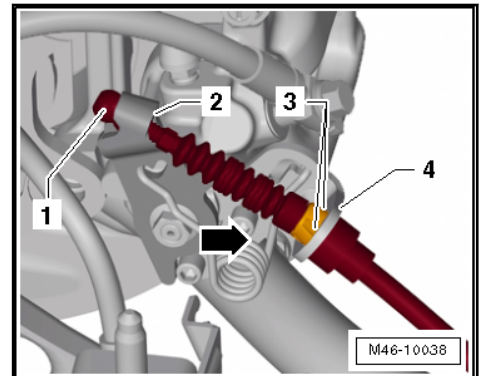


- Attach the brake hose -1- and banjo bolt -2- to the brake caliper.





- Remove the Brake Pedal Actuator -VAG1869/2-.
- Guide the parking brake cable -1- through the bracket -4- on the brake caliper until the tabs -3- engage.



- Push the lever on the brake caliper -2- in the direction of -arrow-.
- Engage the parking brake cable -1- in the lever on the brake caliper -2-.
- Always pre-bleed the brake caliper before installing. Refer to [⇒ C2.2.3 aliper, Pre-Bleeding](#), page 302 .
- Bleed the brake system. Refer to [⇒ S6 ystem](#), page 457.
- Adjust the parking brake. Refer to [⇒ B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .
- Install the wheel and tighten.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*

Tightening Specifications

- ◆ Refer to [⇒ -2.1 Rear Brakes](#), page 184
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

2.3.2 Brake Caliper, Removing and Installing, Rear Brakes CI 38

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Pedal Actuator -VAG1869/2-

Removing

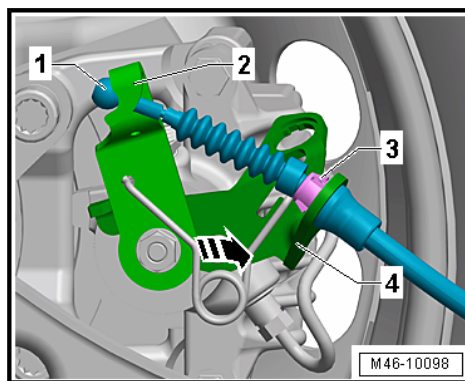
The Procedure Only Applies to the Replacement of or Subsequent Repair Work Done on the Brake Caliper.

When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

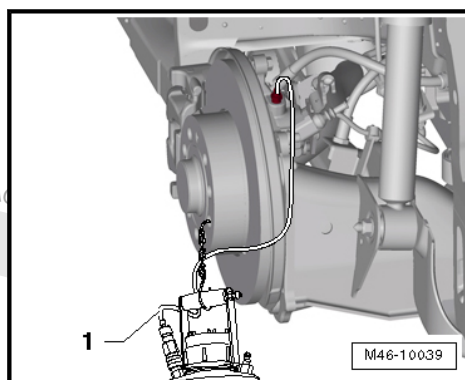
- Loosen the wheel bolts.
- Raise the vehicle.



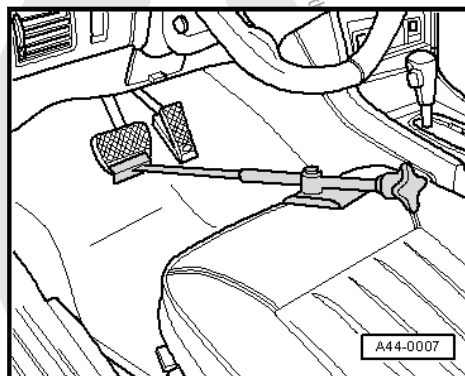
- Remove the wheel.
- Push the lever on the brake caliper -2- in the direction of -arrow-.
- Disengage the brake cable -1- from the lever on the brake caliper -2-.
- Press the tabs -3- together.
- Remove the brake cable -1- from the bracket -4- on the brake caliper.



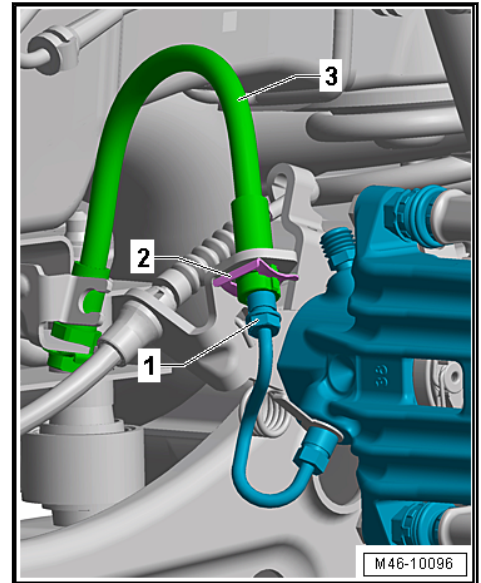
- Connect the bleeder bottle bleed hose -1- to the brake caliper bleed valve and open the breather valve.



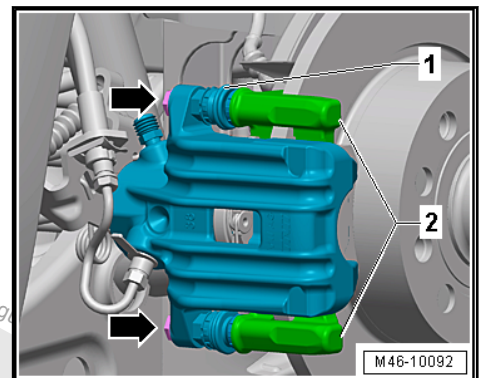
- Insert the Brake Pedal Actuator -VAG1869/2-.



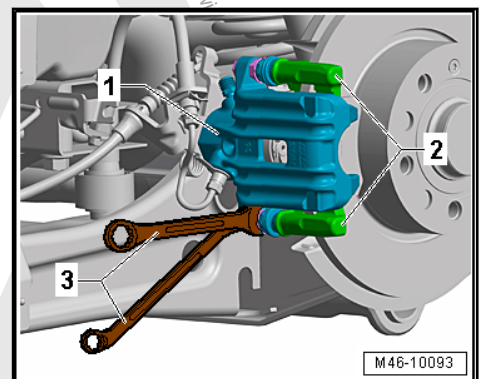
- Close the breather valve and remove the bleeder bottle.
- Loosen the threaded connection between the brake line -1- and the brake hose -3-.



- Remove the clamp -2- and remove the brake hose -2- from the bracket.
- Seal the brake lines -1- and the brake hose -3- immediately using the Plugs -1H0 698 311 A-.
- Remove the brake caliper -1- from the brake carrier -2-.



- Remove the bolts -arrows-.
- While doing so counterhold the guide pin on the brake carrier -2- with a suitable wrench -3-.



- Remove brake caliper -1- and secure with wire so that the weight of the brake caliper does not stress or damage the brake hose.
- Remove the brake caliper from the brake carrier.





Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

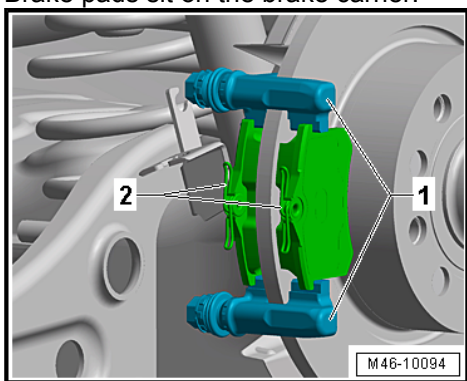
Install in reverse order of removal. Note the following:



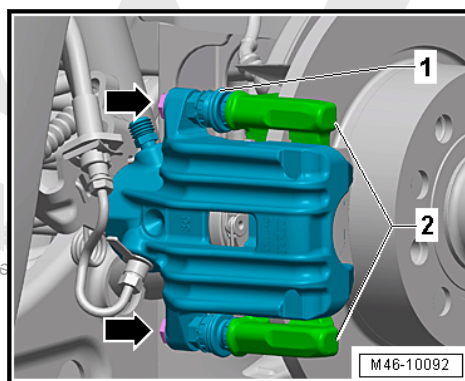
Note

- ◆ Replace the self-locking hex bolts for mounting the brake caliper.
- ◆ After installing, firmly press down on the brake pedal several times with the vehicle stationary so that the brake pads are properly set in their respective operating position.

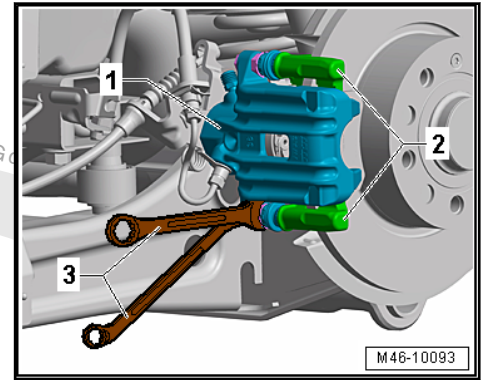
- Piston is pressed back. Refer to ➔ [page 206](#) .
- Brake pads sit on the brake carrier.



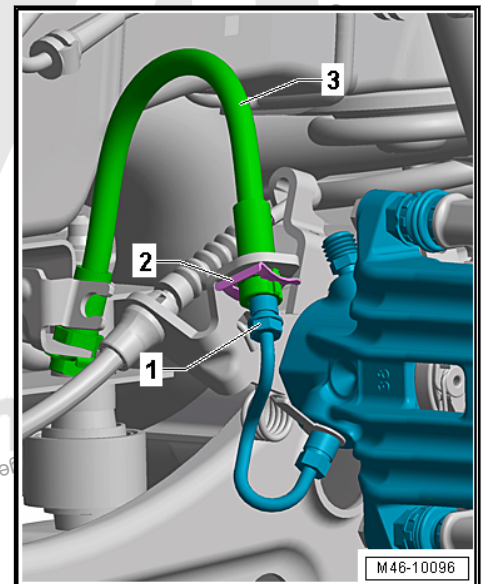
- Check the caps for damage and correct seating -item 9- ➔ [Item 9 \(page 297\)](#) .
- Check the guide pins for ease of movement -item 8- ➔ [Item 8 \(page 297\)](#) .
- Attach the brake caliper -1- with the new self-locking screws -arrows- to the brake carrier -2-.



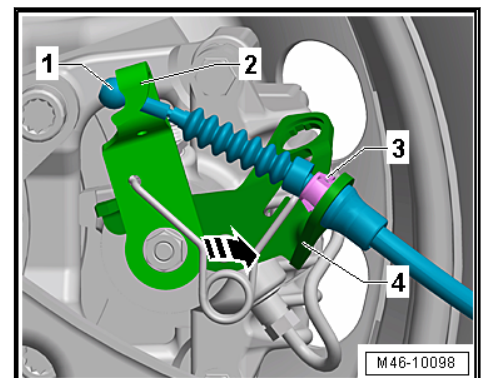
- Use new self-locking bolts -arrows-.
- Tighten the brake caliper -1- to the brake carrier -2-.



- While tightening counterhold the guide pin with a suitable wrench -3-.
- Install the brake line -1- and the brake hose -3- and secure with the clamp -1-.



- Remove the Brake Pedal Actuator -VAG1869/2-.
- Push the brake cable -1- through the bracket -4- on the brake caliper until the tabs -3- engage.
- Push the lever on the brake caliper -2- in the direction of -arrow-.
- Engage the brake cable -1- into the lever on the brake caliper -2-.



- Bleed the brake system. Refer to [S6 system](#), page 457.



- Adjust the parking brake. Refer to ➤ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .

Tightening Specifications

- ◆ Refer to ➤ [-2.1 Rear Brakes](#), page 184
- ◆ Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

2.3.3 Brake Cylinder, Removing and Installing, Drum Brake



Note

- ◆ *After replacing the brake cylinder, the brake pads and the brake shoes, press the brake pedal once so that the brake shoes are properly seated.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- to relieve pressure before removing a brake cylinder or brake carrier or before disconnecting a brake line from the brake cylinder.*

Special tools and workshop equipment required

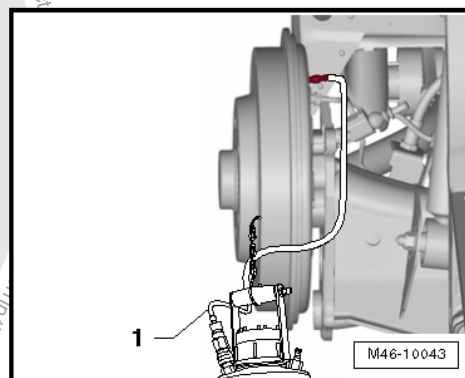
- ◆ Brake Pedal Actuator -VAG1869/2-.
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-

Perform the Following:

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Reset brake. Refer to ➤ [B2.7 rake, Resetting](#), page 228 .
- Remove the brake drum. Refer to ➤ [D2.5.2 rum, Removing and Installing](#), page 223 .

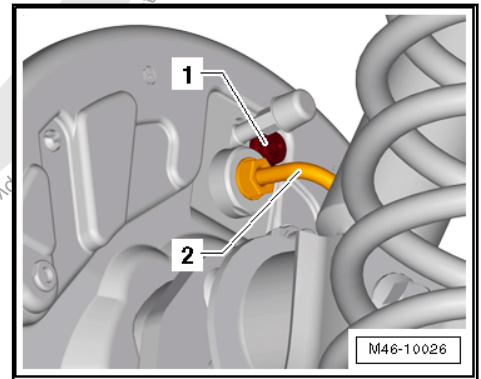
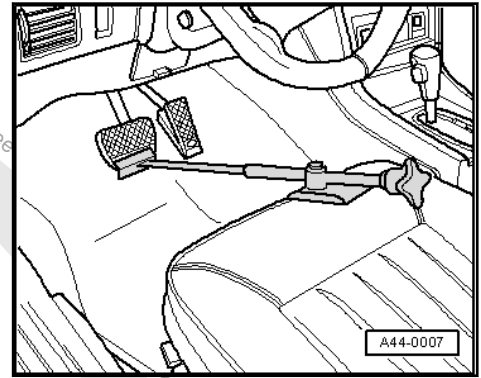
Attach the bleeder bottle bleed hose -1- to the breather valve on the brake cylinder and open the breather valve.



- Insert the Brake Pedal Actuator -VAG1869/2-.



- Close the breather valve and remove the bleeder bottle.
- Remove the brake line tube fitting -2- from the brake cylinder.
- Seal off the brake line and threaded hole immediately using Plugs -1H0 698 311 A-.
- Remove the brake cylinder bolt -1- from the brake carrier and remove the brake cylinder.



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

- Bleed the brake system. Refer to [⇒ S6 ystem", page 457](#) .
- Install the wheel and tighten.
- Adjust the parking brake. Refer to [⇒ B3.4.1 rake, Adjusting, Drum Brake", page 252](#) .

Tightening Specification

- ◆ Refer to [⇒ -2.1 Rear Brakes", page 184](#)
- ◆ Refer to [⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.](#)



2.4 Brake Carrier, Removing and Installing

⇒ [C2.4.1 arrier, Removing and Installing, Drum Brake", page 218](#)

⇒ [C2.4.2 arrier, Removing and Installing, Disc Brake", page 220](#)

2.4.1 Brake Carrier, Removing and Installing, Drum Brake



Note

- ◆ *After replacing the brake cylinder, the brake pads and the brake shoes, press the brake pedal once so that the brake shoes are properly seated.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- to relieve pressure before removing a brake cylinder or brake carrier or before disconnecting a brake line from the brake cylinder.*

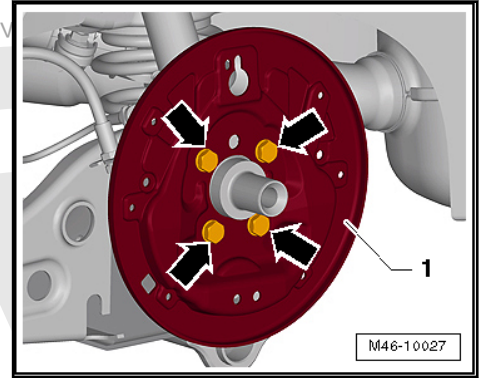
Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Brake Pedal Actuator -VAG1869/2-.

Perform the Following:

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Reset brake. Refer to ⇒ [B2.7 rake, Resetting", page 228](#) .
- Remove brake drum. Refer to ⇒ [D2.5.2 rum, Removing and Installing", page 223](#) .
- Remove the wheel bearing unit. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42.
- Remove the brake shoes. Refer to ⇒ [D2.5.2 rum, Removing and Installing", page 223](#) .
- Remove the brake cylinder. Refer to ⇒ [C2.3.3 ylinder, Removing and Installing, Drum Brake", page 216](#) .
- Remove the threaded connections -arrows-.
- Remove the brake carrier -1- with the stub axle from the axle beam.



Cleaning



WARNING

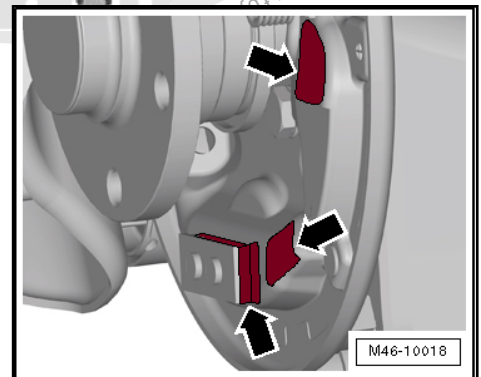
Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

- Clean the contact surfaces for the brake shoes on the support plate and brake carrier.

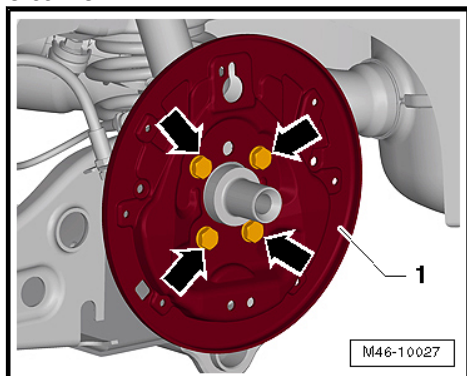


- Lubricate the contact surfaces -arrows- with Grease -G 000 650- (at six places around the outside).



Note

Clean the threaded holes in the axle beam for the bolts -arrows- before installing the brake carrier -1-.



Clean the threaded holes for the self-locking bolts or for the bolts coated with locking fluid. If the holes are not cleaned, then the bolts could break off the next time they are removed.

- Bleed the brake system. Refer to [⇒ S6 ystem”, page 457](#) .
- Install the wheel and tighten.
- Adjust the parking brake. Refer to [⇒ B3.4.1 rake, Adjusting, Drum Brake”, page 252](#) .

Tightening Specifications

- ◆ Refer to [⇒ -2.1 Rear Brakes”, page 184](#)
- ◆ Refer to [⇒ -2.1.2 Drum Brakes”, page 186](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

2.4.2 Brake Carrier, Removing and Installing, Disc Brake

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Brake Caliper Tool -T10165-
- ◆ Multipoint Socket -T10035-

Perform the Following:

Removing

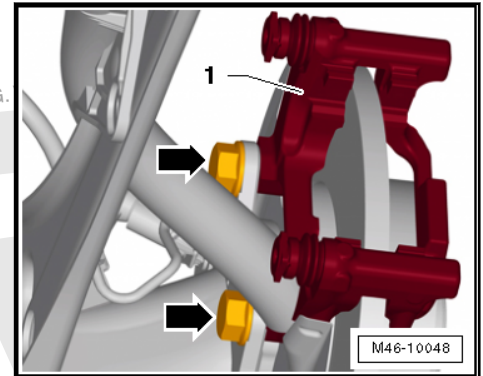
When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake pads. Refer to [⇒ P2.2.2 ads, Removing and Installing, Rear Brakes CI 38”, page 203](#) .



- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the threaded connection -arrows- of the brake carrier -1-.
- Remove the brake carrier -1-.



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

- Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.

If using the brake pads again, install the marked pads in the same location.

- Secure the brake caliper with new self-locking bolts. Refer to the Parts Catalog.



Note

- ◆ *Each time after replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- ◆ *Check the brake fluid level after removing the brake pads.*

- Install the wheel and tighten.

Tightening Specifications

- ◆ Refer to [⇒ -2.1 Rear Brakes-, page 184](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



2.5 Brake Rotor, Removing and Installing

⇒ [R2.5.1 rotor, Removing and Installing", page 222](#)

⇒ [D2.5.2 drum, Removing and Installing", page 223](#)

2.5.1 Brake Rotor, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Brake Caliper Tool -T10165-

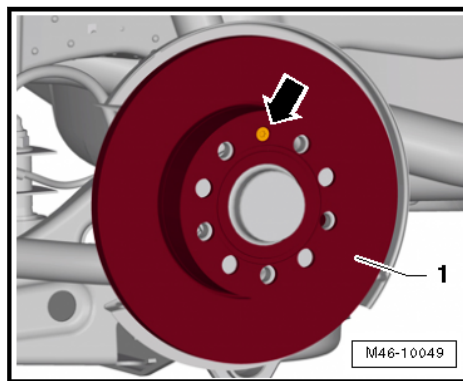
Perform the Following:

Removing

When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position. Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake pads. Refer to ⇒ [P2.2.2 pads, Removing and Installing, Rear Brakes CI 38", page 203](#) .
- Remove the brake caliper and secure it with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove the brake carrier. Refer to ⇒ [C2.4.2 carrier, Removing and Installing, Disc Brake", page 220](#) .
- Loosen the threaded connection -arrow- of the brake rotor -1-.
- Remove the brake rotor.



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!



Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *Carefully clean before installing.*
 - ◆ *Check for wear and damage, make sure the dimensions are correct and that the brake surface is flawless.*
 - ◆ *Replace on both sides of axle if worn.*
 - Thoroughly clean the contact surfaces for the brake pads on the brake carrier and remove any corrosion.
- If using the brake pads again, install the marked pads in the same location.
- Secure the brake caliper with new self-locking bolts. Refer to the Parts Catalog.



Note

- ◆ *With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly set in their respective position.*
- ◆ *Check the brake fluid level.*
- Install the wheel and tighten.

Tightening Specifications

- ◆ Refer to ➔ [-2.1 Rear Brakes](#), page 184
- ◆ Wheel Bolts. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

2.5.2 Brake Drum, Removing and Installing

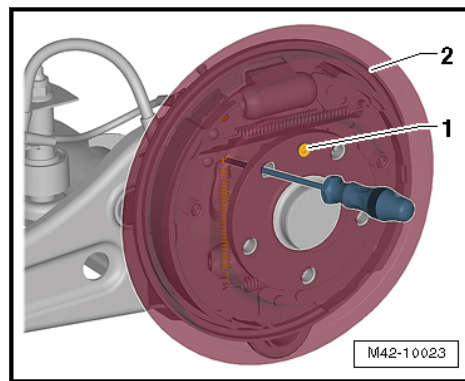
Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-

Perform the Following:

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Push the brake back with a screwdriver. Refer to ➔ [B2.7 rake, Resetting](#), page 228 .



- Remove the bolt -1-.
- Remove the brake drum -2- evenly.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:



Note

Clean carefully and check for wear and damage, make sure the dimensions are correct and that the brake surface is perfect.

Install the brake drum evenly over the brake pads. Be careful not to tilt the brake drum.

Install the wheel and tighten.

- Adjust the parking brake. Refer to [⇒ B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .

Tightening Specifications

- ◆ Refer to [⇒ -2.1 Rear Brakes](#), page 184
- ◆ Refer to [⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.](#)

2.6 Brake Shoes, Removing and Installing



Note

- ◆ *After replacing the brake cylinder, the brake pads and the brake shoes, press the brake pedal once so that the brake shoes are properly seated.*
- ◆ *Use the Brake Charger/Bleeder Unit -VAS5234- to extract brake fluid from the brake fluid reservoir.*
- ◆ *Install the Brake Pedal Actuator -VAG1869/2- to relieve pressure before removing a brake cylinder or brake carrier or before disconnecting a brake line from the brake cylinder.*



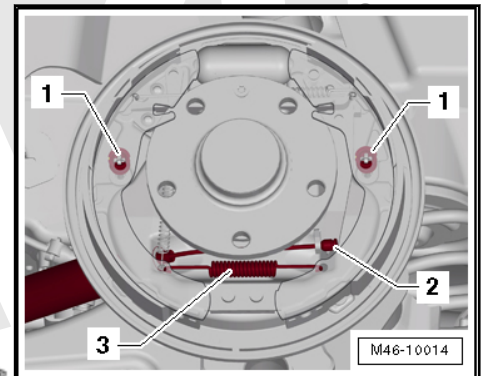
Special tools and workshop equipment required

- ◆ T-Handle Hook -3438-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-

Perform the Following:

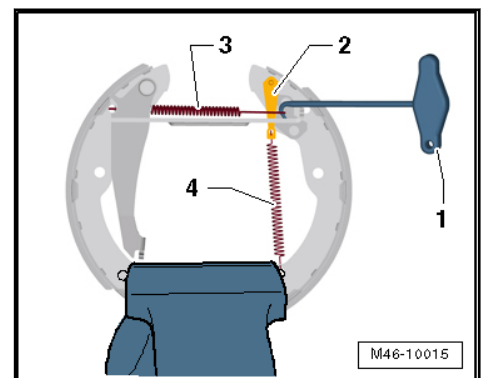
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Reset brake. Refer to [⇒ B2.7 rake, Resetting", page 228](#) .
- Remove brake drum. Refer to [⇒ D2.5.2 rum, Removing and Installing", page 223](#) .
- Remove the spring plate -1- and pressure springs.
- Press against the spring and twist 90°.
- Disengage the return spring -3- and the T-Handle Hook -3438- underneath.
- Pry out the lower brake shoe with a screwdriver.
- Lay the brake shoe on the support plate.
- Disengage the parking brake cable -2-.
- Remove the brake shoes between the wheel hub and the brake carrier.



Disassembling

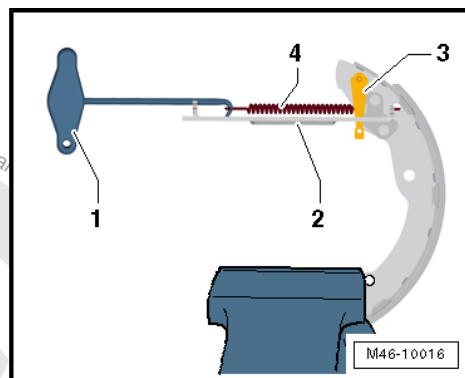
- Clamp brake shoes into vise.
- Remove the tension spring -4- for the wedge -2-.



- 1 - T-Handle Hook -3438-



- Disengage the upper return spring -3-.
- Disengage the contact spring -4-.



1 - T-Handle Hook -3438-

- Remove the pressure rod -2- and wedge -3- from the brake shoe.

Cleaning



WARNING

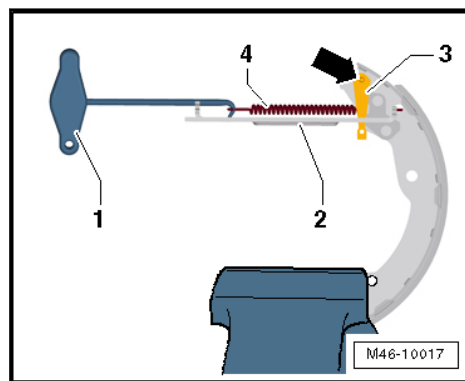
Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

- Hook the contact spring -4- into the pressure rod -2-.



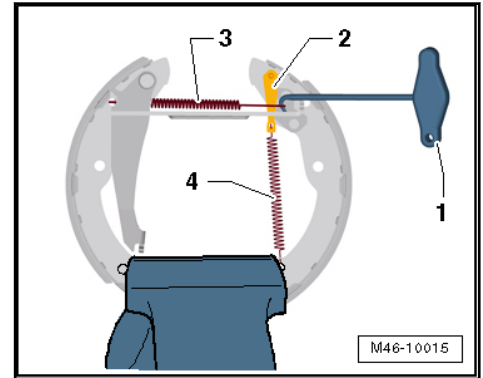
1 - T-Handle Hook -3438-

- Fit in the wedge -3- at the same time.

Installation position:

The elevation -arrow- must be visible when installing.

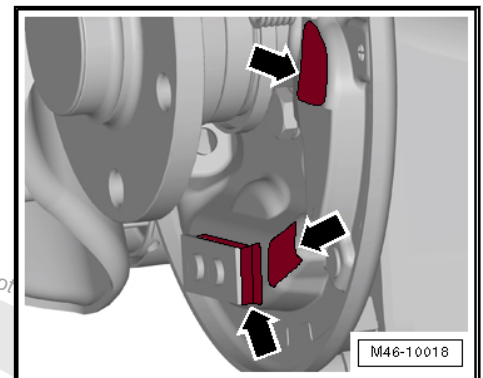
- Attach the brake shoe with the parking brake lever to the pressure rod.
- Attach the return spring -3-.



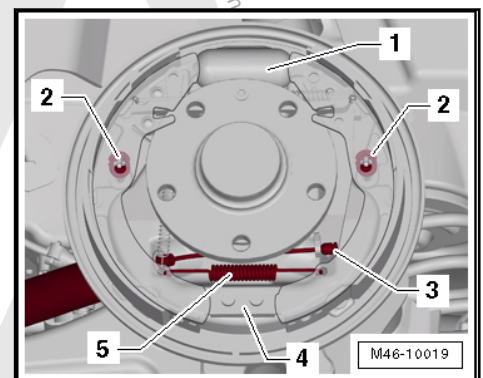
1 - T-Handle Hook -3438-

- Attach the tension spring -4- for the wedge -2-.

Lubricate the contact surfaces for the brake shoes on the support plate -arrow- and on the brake carrier -arrow- (at six places around the outside) using Grease -G 000 650-.



- Install the brake shoes between the wheel hub and the brake carrier.
- Mount the brake shoes on the brake cylinder piston -1-.



- Attach the parking brake cable -3- to the parking brake lever.
- Install the return spring -5- and the T-Handle Hook -3438- underneath.
- Pry out the brake shoe behind the lower support -4-.
- Install the spring plate -2- with the pressure spring and turn 90°.
- Install the brake drum. Refer to [⇒ D2.5.2 rum, Removing and Installing](#), page 223 .
- Install and fasten wheels.



- Adjust the parking brake. Refer to ➤ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .

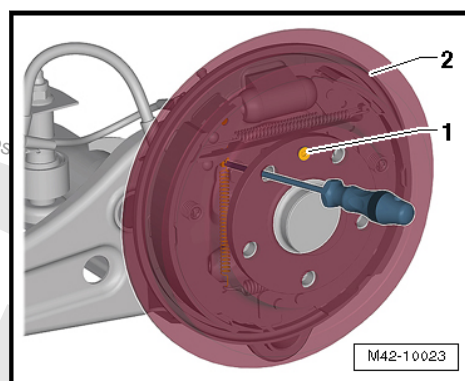
Tightening Specifications

- ◆ Refer to ➤ [-2.1 Rear Brakes](#), page 184
- ◆ Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

2.7 Drum Brake, Resetting

Perform the Following:

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Use a screwdriver to push the wedge upward through a threaded hole in the brake drum -2-.
- The bolt -1- secures the brake drum -2- to the wheel hub.



2.8 Brake Shield, Removing and Installing

➤ [S2.8.1 hield, Removing and Installing, Twist Beam Rear Suspension](#), page 228

➤ [S2.8.2 hield, Removing and Installing, Multi-Link Rear Axle](#), page 230

2.8.1 Brake Shield, Removing and Installing, Twist Beam Rear Suspension

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Brake Caliper Tool -T10165-

Perform the Following:

Removing

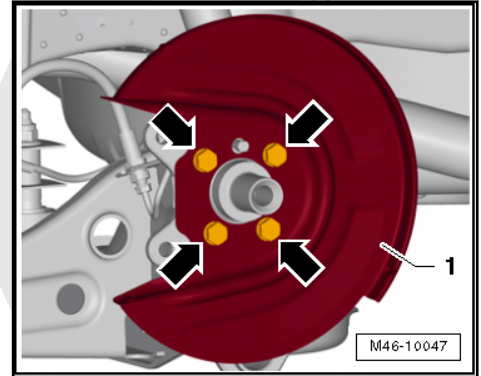
When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.



- Remove the brake carrier. Refer to ⇒ [C2.4.2 Carrier, Removing and Installing, Disc Brake](#), page 220.
- Remove the brake rotor. Refer to ⇒ [R2.5.1 Rotor, Removing and Installing](#), page 222.
- Remove the wheel bearing unit. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42.
- Remove the threaded connection -arrows- of the cover plate -1-.



- Remove the cover plate -1- together with the stub axle.

Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

If using the brake pads again, install the marked pads in the same location.

- Secure the brake caliper with new self-locking bolts. Refer to the Parts Catalog.



Note

- ◆ *Each time after replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- ◆ *Check the brake fluid level after removing the brake pads.*

- Install the wheel and tighten.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Rear Brakes](#), page 184
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.



2.8.2 Brake Shield, Removing and Installing, Multi-Link Rear Axle

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Brake Caliper Tool -T10165-

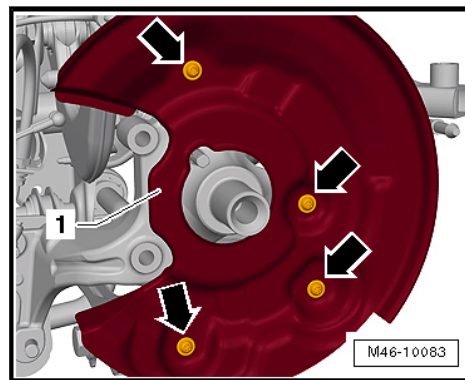
Perform the Following:

Removing

When Removing, Mark the Brake Pads That Will Be Used Again. Install in the Same Position, Otherwise the Braking Effect Will Be Uneven.

Do Not Open the Brake Hydraulic System When Removing!

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake carrier. Refer to ➔ [C2.4.2 arrier, Removing and Installing, Disc Brake](#), page 220 .
- Remove the brake rotor. Refer to ➔ [R2.5.1 otor, Removing and Installing](#), page 222 .
- Remove the wheel bearing unit. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 42.
- Remove the threaded connection -arrows- of the cover plate -1-.



- Remove the cover plate -1-.

Cleaning:



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

If using the brake pads again, install the marked pads in the same location.



- Secure the brake caliper with new self-locking bolts. Refer to the Parts Catalog.



Note

- ◆ *Each time after replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- ◆ *Check the brake fluid level after removing the brake pads.*
- Install the wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Rear Brakes](#), page 184
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.





3 Parking Brake

⇒ [-3.1 Parking Brake", page 232](#)

⇒ [B3.2 rake Lever, Removing and Installing", page 234](#)

⇒ [B3.3 rake Cable, Removing and Installing", page 238](#)

⇒ [B3.4 rake, Adjusting", page 252](#)

⇒ [B3.5 rake Lever Trim Panel, Removing and Installing", page 255](#)

3.1 Overview - Parking Brake





1 - Handle for Parking Brake Lever

- ❑ Removing and installing. Refer to ➤ [B3.5 rake Lever Trim Panel, Removing and Installing](#), page 255 .
- ❑ Do not reuse the handle for the parking brake lever.

2 - Parking Brake Lever Trim

- ❑ Removing and installing. Refer to ➤ [B3.5 rake Lever Trim Panel, Removing and Installing](#), page 255 .

3 - Parking Brake Lever

- ❑ Removing and installing. Refer to ➤ [B3.2 rake Lever, Removing and Installing](#), page 234 .

4 - Hex Nut

- ❑ 20 Nm
- ❑ Quantity: 2

5 - Compensator Bracket

6 - Adjusting Nut

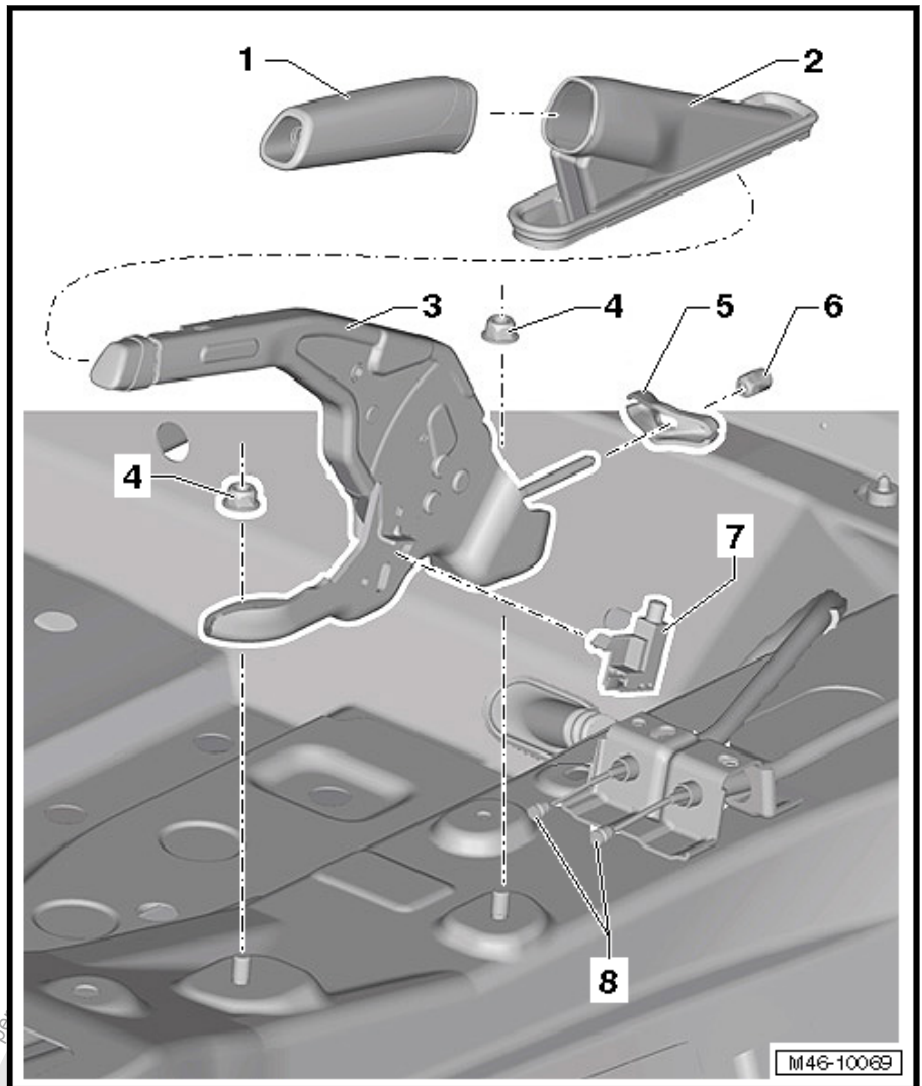
- ❑ Parking Brake, Vehicles with Disc Brakes, Adjusting. Refer to ➤ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .
- ❑ Parking Brake, Vehicles with Drum Brakes, Adjusting. Refer to ➤ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .

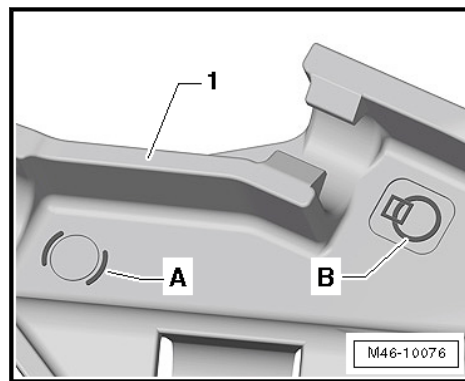
7 - Parking Brake Indicator Lamp Switch -F9-

8 - Parking Brake Cables

- ❑ Removing and installing on vehicles with drum brakes. Refer to ➤ [B3.3.1 rake Cable, Removing and Installing, Drum Brake](#), page 238 .
- ❑ Removing and installing on vehicles with disc brakes on the twist beam rear suspension. Refer to ➤ [B3.3.2 rake Cable, Removing and Installing, Disc Brakes on Twist Beam Rear Suspension](#), page 243 .
- ❑ Removing and installing on vehicles with disc brakes on the multi-link rear axle. Refer to ➤ [B3.3.3 rake Cable, Removing and Installing, Disc Brakes on Multi-Link Rear Axle](#), page 248 .
- ❑ Note the installed position on the rear axle. Refer to ➤ [Fig. "Installed Position of the Parking Brake Cable on the Twist Beam Rear Suspension Bracket"](#), page 233

Installed Position of the Parking Brake Cable on the Twist Beam Rear Suspension Bracket





1 - Twist beam rear suspension bracket

A - Drum brake symbol

B - Disc brake symbol

A - Guide for the drum brake parking brake cable

B - Guide for the parking brake cable for the disc brake

3.2 Parking Brake Lever, Removing and Installing

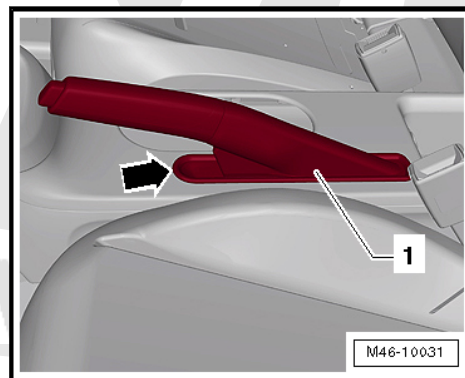
Special tools and workshop equipment required

- ◆ Trim Removal Wedge -3409-
- ◆ Puller - Unit Injector -T10055-
- ◆ Assembly Tool -T10488-

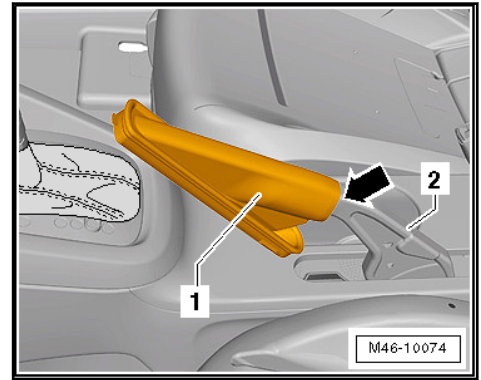
Perform the Following:

Removing

- Unclip the front parking brake lever trim -1- -arrow-.



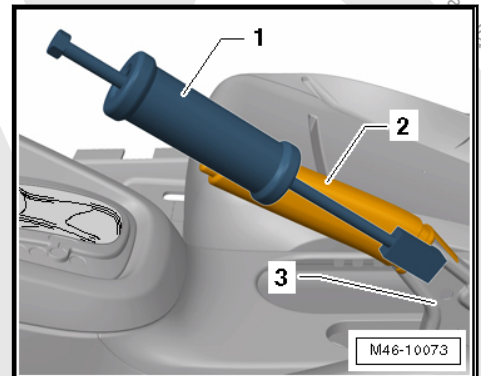
- Set the parking brake.



- Roll the parking brake lever trim -1- on the parking brake lever -2- up and over the handle.
- Carefully unclip and remove the parking brake lever trim -1- on the handle -arrow- using the Trim Removal Wedge -3409-.

If a New Parking Brake Lever Is Being Installed:

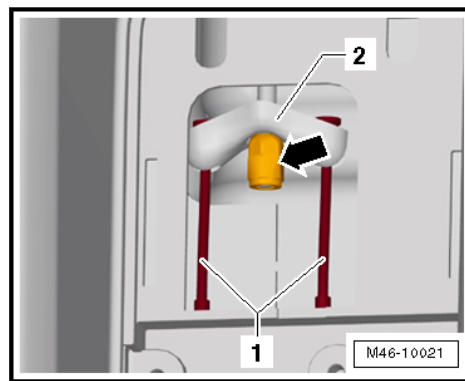
- Carefully unclip the parking brake lever trim -1- on the handle -arrow- and pull it off.
- Position the Puller - Unit Injector -T10055- -1- on the side of the handle -2-.



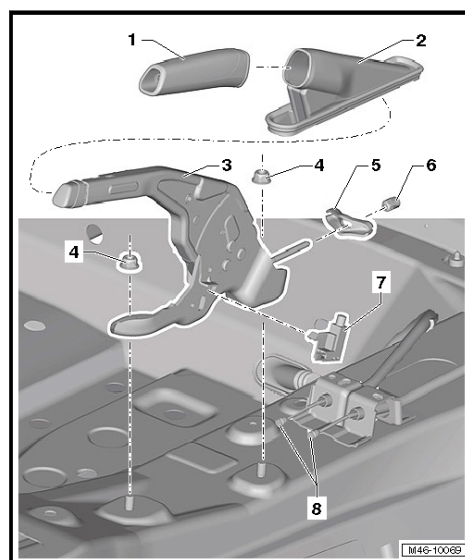
- Remove the handle -2- from the parking brake lever -3- using the Puller - Unit Injector -T10055-.

Continuation for All Versions:

- Remove the center armrest, if equipped. Refer to ➤ Body Interior; Rep. Gr. 68; Center Console; Center Console, Removing and Installing, »Basic« .
- Remove the center console. Refer to ➤ Body Interior; Rep. Gr. 68; Center Console; Center Console, Removing and Installing, »Basic« .
- Loosen the adjusting nut -1- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.



- Release and disconnect connector on Parking Brake Indicator Lamp Switch -F9-.



- Remove the nuts -4-.
- Remove parking brake lever -3-.

Installing

Install in reverse order of removal. Note the following:

If the Parking Brake Lever Was Replaced:



WARNING

Do not reuse the handle for the parking brake lever.

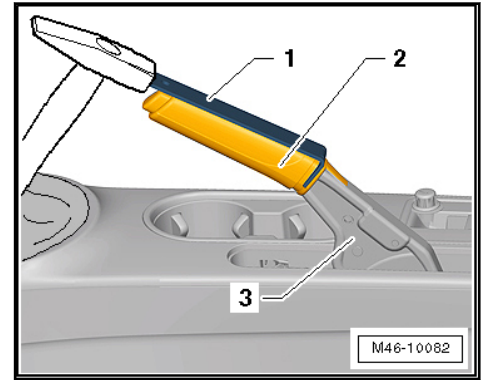
- Set the parking brake.



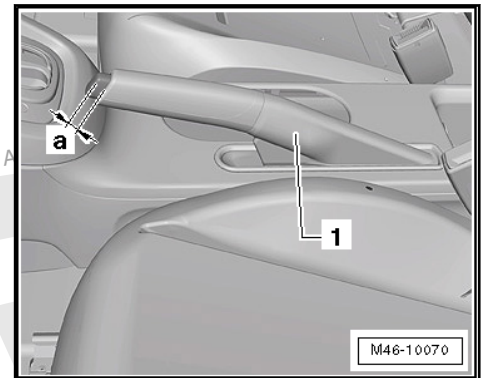
Note

Pay attention to the direction of installation before installing the parking brake lever trim!

- Remove handle -2- and adhesive strip to prevent damage.



- Install the handle -2- on the parking brake lever -3-.
- Use the Assembly Tool -T10488- -1-.
- Mount the handle carefully on the parking brake lever -1- until dimension -a- is reached.

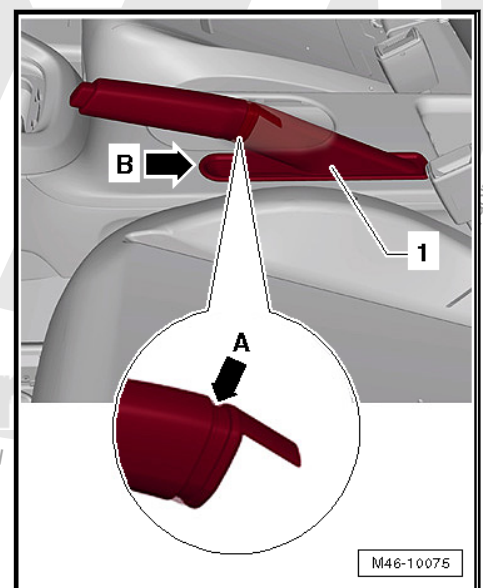


Maß a - = 10 mm ± 1 mm

- Remove the adhesive tape.

Continuation for All Versions

- Pull parking brake lever trim -1- over handle.



- Insert the parking brake lever trim -1- into the groove -arrow A- in the handle.



- Insert the parking brake lever trim -1- into the center console and clip it in the front -arrow B-.
- Parking brake, adjusting (drum brake). Refer to ⇒ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .
- Parking brake, adjusting (disc brake). Refer to ⇒ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .

Tightening Specifications

- ◆ Refer to ⇒ [-3.1 Parking Brake](#), page 232
- ◆ Refer to ⇒ Body Interior; Rep. Gr. 68; Center Console; Center Console, Removing and Installing, »Basic« .
- ◆ Refer to ⇒ Body Interior; Rep. Gr. 68; Center Console; Center Console, Removing and Installing, »Basic« .

3.3 Rear Brake Cable, Removing and Installing

⇒ [B3.3.1 rake Cable, Removing and Installing, Drum Brake](#), page 238

⇒ [B3.3.2 rake Cable, Removing and Installing, Disc Brakes on Twist Beam Rear Suspension](#), page 243

⇒ [B3.3.3 rake Cable, Removing and Installing, Disc Brakes on Multi-Link Rear Axle](#), page 248

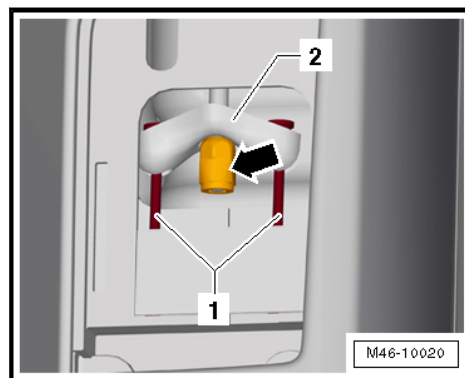
3.3.1 Rear Brake Cable, Removing and Installing, Drum Brake

Perform the Following:

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Release parking brake.
- Reset brake. Refer to ⇒ [B2.7 rake, Resetting](#), page 228.
- Remove brake drum. Refer to ⇒ [D2.5.2 rum, Removing and Installing](#), page 223 .

Vehicles with the Highline Center Console

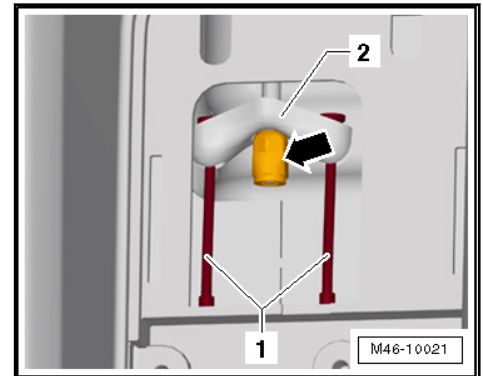


- Open the cover on the rear storage compartment.
- Remove the mat from the storage compartment.



- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.

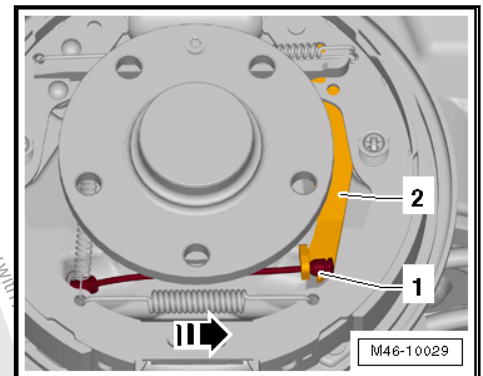
Vehicles with the Basic Center Console



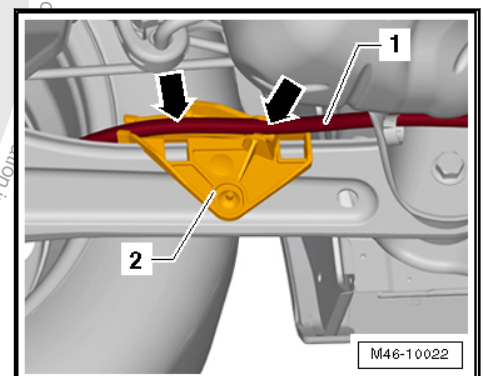
- Remove the mat from the rear storage compartment.
- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.

Continuation for Both Vehicles

- Use pliers to pull the parking brake cable -1- toward the rear in direction of -arrow-.
- Disengage the parking brake cable -1- from the lever -2-.

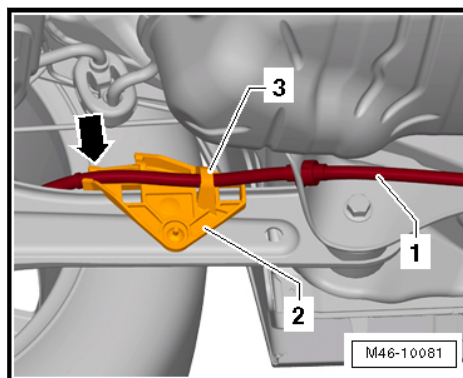


- Unclip the parking brake cable -1- from the tabs -arrows- on the bracket -2- on the rear axle.



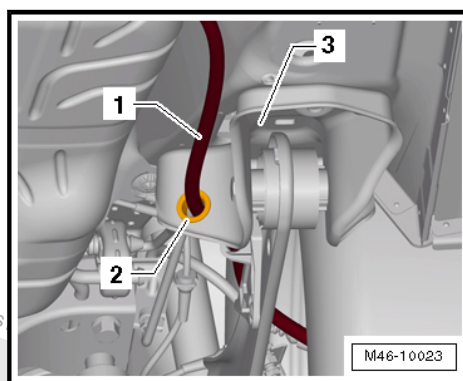


Vehicles with Grommet on Bracket

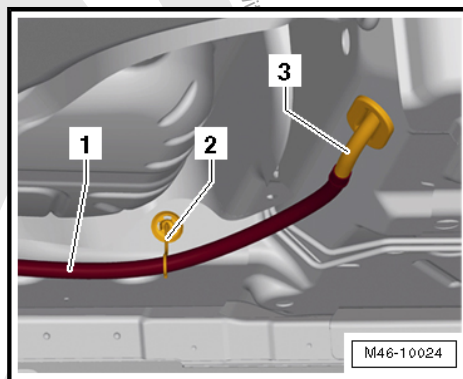


- Unclip parking brake cable -1- on bracket -2- -arrow-.
- Pull the parking brake cable -1- out of the guide -3-.

Continuation for All Vehicles



- Remove the parking brake cable -1- from the grommet -2- on the rear axle mounting bracket -3-.
- Disengage the parking brake cable -1- from the bracket -2- and pull it out of the guide tube -3-.





Installing

Install in reverse order of removal. Note the following:

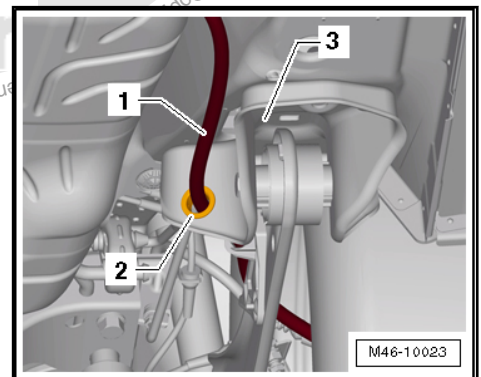
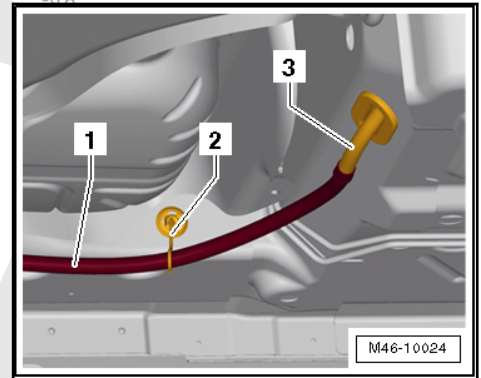
- Slide the parking brake cable -1- into the guide tube -3- and engage it in the bracket -2-.



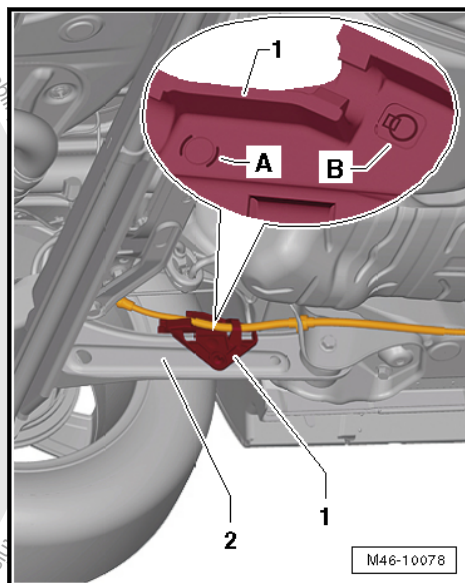
Note

Attach the parking brake cable to at the marking on the cable.

- Slide the parking brake cable -1- through the grommet -2- on the mounting bracket located on the rear axle -3-.



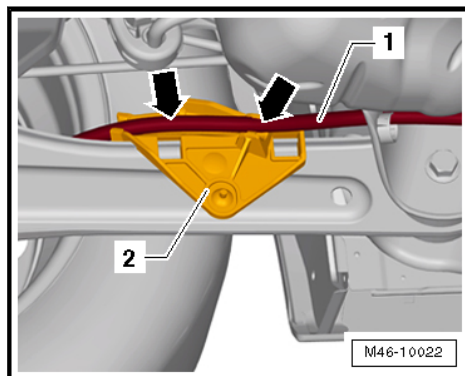
Make sure that for vehicles with drum brakes the parking brake cable is inserted into the bracket -1- for the guide -A- on the rear axle -2-.



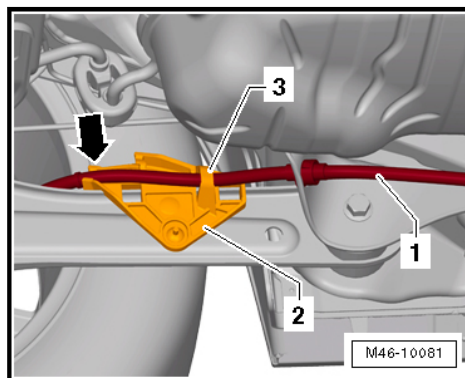
Note

Marking -A- symbolizes the drum brake.

- Carefully clip the parking brake cable -1- into the tabs -arrows- on the bracket -2-.



Vehicles with Grommet on Bracket

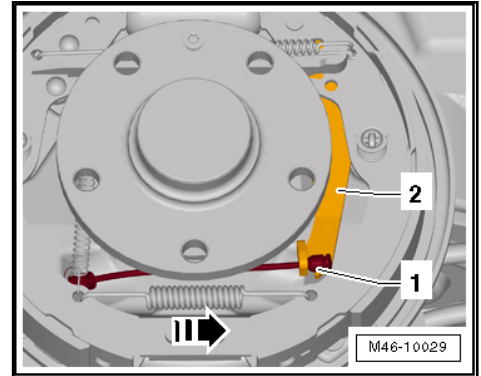


- Slide the parking brake cable -1- through the guide -3- for the bracket -2-.
- Carefully clip the parking brake cable -1- into the tab -arrow- on the bracket -2-.



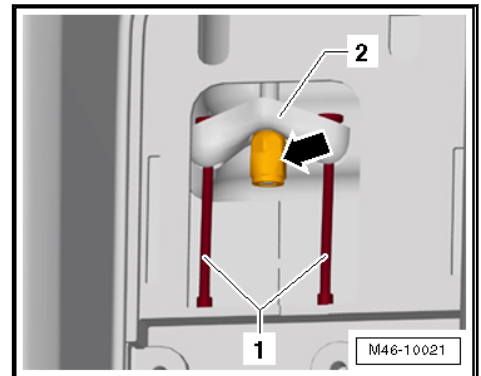
Continuation for All Vehicles

- Use pliers to pull the parking brake cable -1- toward the rear in direction of -arrow-.
- Engage the parking brake cable -1- on the lever -2-.



The parking brake cable must be installed free of tension between the brake drum and the bracket on the rear axle.

- Attach parking brake cable -1- to pull-rod -2-.
- Install the brake drum.
- Pretension the parking brake cable using the adjustment nut -arrow-.
- Install the wheel and tighten.



- Adjust the parking brake. Refer to ⇒ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .

Tightening Specifications

- ◆ Wheel Bolts. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

3.3.2 Rear Brake Cable, Removing and Installing, Disc Brakes on Twist Beam Rear Suspension

Perform the Following:

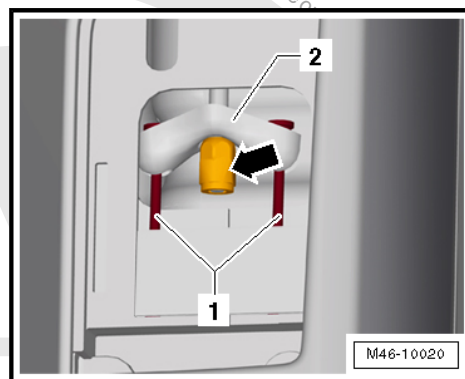
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Release parking brake.



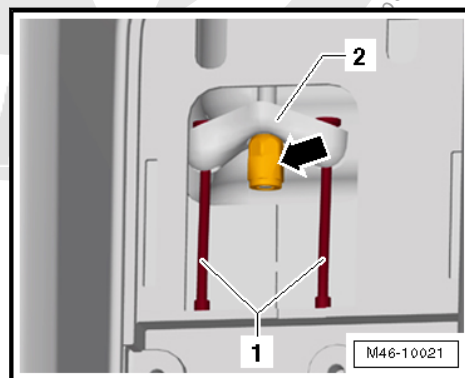
Vehicles with the Highline Center Console

- Open the cover on the rear storage compartment.
- Remove the mat from the storage compartment.
- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.



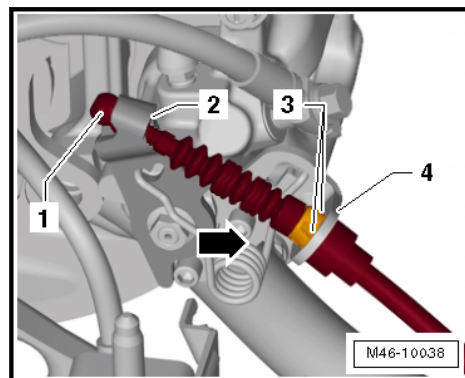
Vehicles with the Basic Center Console

- Remove the mat from the rear storage compartment.
- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.



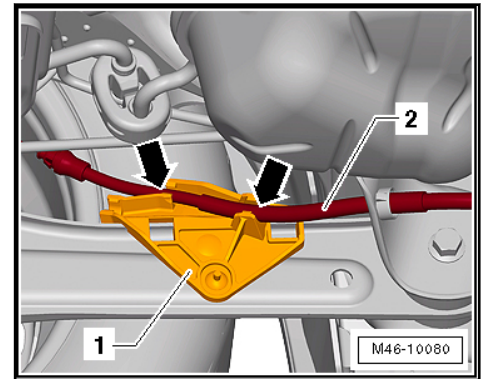
Continuation for Both Vehicles

- Press the lever -2- located on the brake caliper in direction of -arrow- and disengage the parking brake cable -1-.
- Squeeze the tabs -3- together and remove the parking brake cable from the bracket -4- on the brake caliper.



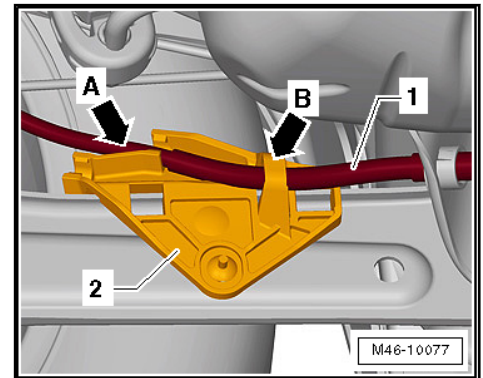


- Unclip the parking brake cable -2- from the tabs -arrows- on the bracket -1-.



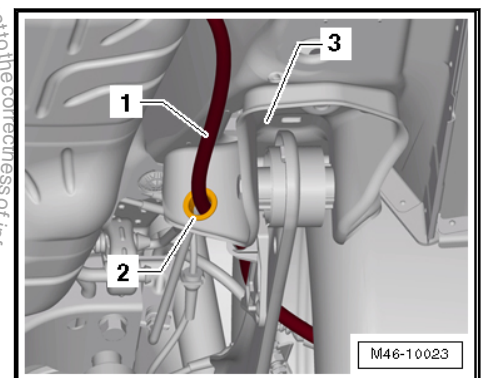
Vehicles with Grommet on Bracket

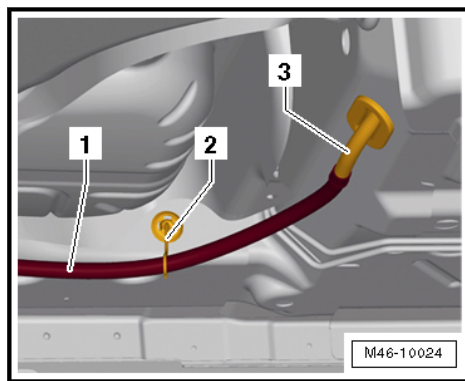
- Pull the parking brake cable -1- out of the retainer -arrow A- on the bracket -2-.
- Remove the parking brake cable -1- from the guide -arrow B- for the bracket -2-.



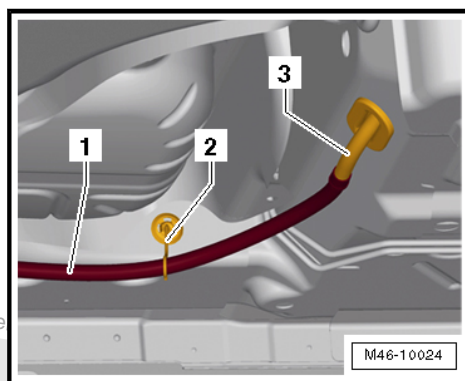
Continuation for All Vehicles

- Remove the parking brake cable -1- from the grommet -2- on the rear axle mounting bracket -3-.
- Disengage the parking brake cable -1- from the bracket -2- and pull it out of the guide tube -3-.





Installing



Install in reverse order of removal. Note the following:

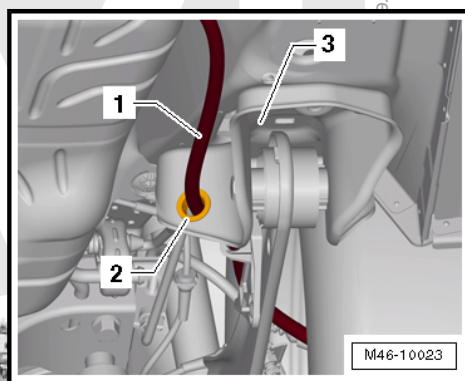
- Slide the parking brake cable -1- into the guide tube -3- and engage it in the bracket -2-.



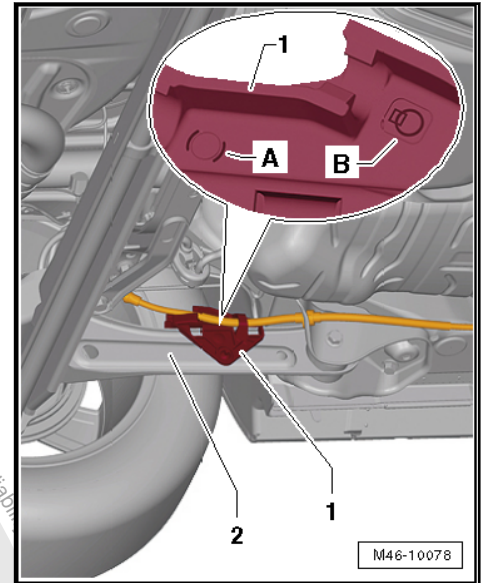
Note

Attach the parking brake cable to at the marking on the cable.

- Slide the parking brake cable -1- through the grommet -2- on the mounting bracket located on the rear axle -3-.



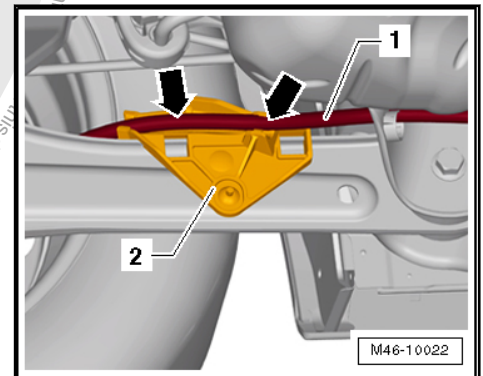
Make sure that for vehicles with disc brakes, the parking brake cable is inserted into the bracket -1- for the guide -B- on the rear axle -2-.



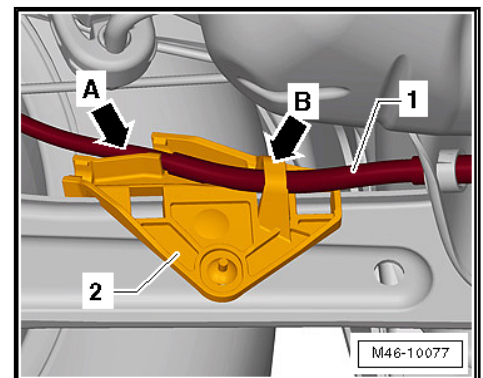
Note

Marking -B- symbolizes the disc brake.

Carefully clip the parking brake cable -1- into the tabs -arrows- on the bracket -2-.



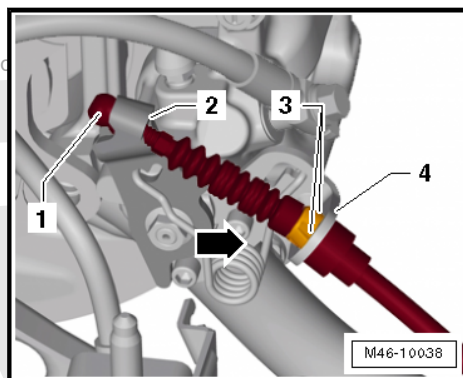
Vehicles with Grommet on Bracket



- Slide the parking brake cable -1- through the guide -arrow B- for the bracket -2-.
- Carefully clip the parking brake cable -1- into the tabs -arrows A- on the bracket -2-.



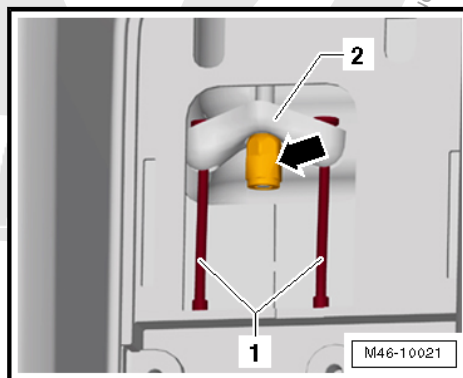
Continuation for All Vehicles



- Push the parking brake cable -1- through the bracket -4- on the brake caliper until both tabs -3- engage.
- Press the lever -2- located on the brake caliper in direction of -arrow- and engage the parking brake cable -1-.

The parking brake cable must be installed without tension between the bracket on the brake caliper and the bracket on the rear axle.

- Attach parking brake cable -1- to pull-rod -2-.



- Pretension the parking brake cable using the adjustment nut -arrow-.
- Adjust the parking brake. Refer to ➔ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .

3.3.3 Rear Brake Cable, Removing and Installing, Disc Brakes on Multi-Link Rear Axle

Perform the Following:

Removing

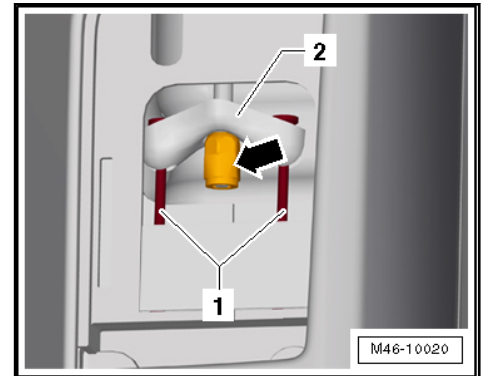
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Release parking brake.

Vehicles with the Highline Center Console

- Open the cover on the rear storage compartment.
- Remove the mat from the storage compartment.

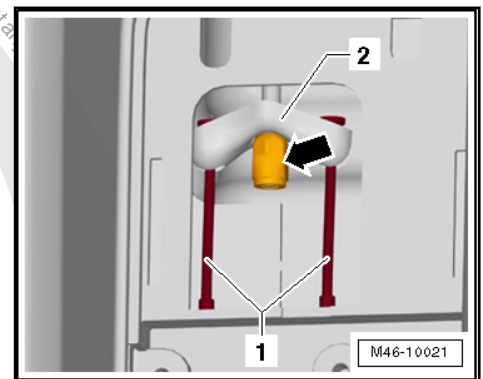


- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.



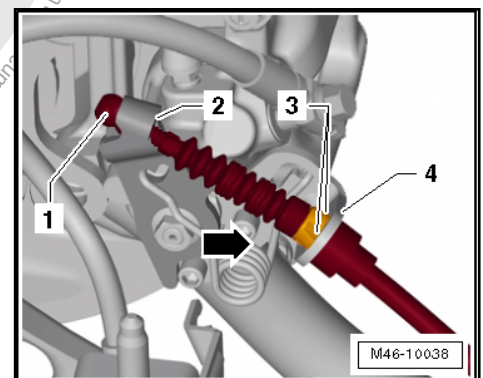
Vehicles with the Basic Center Console

- Remove the mat from the rear storage compartment.
- Loosen the adjusting nut -arrow- until it is possible to disengage the parking brake cable -1- from the compensator bracket -2-.

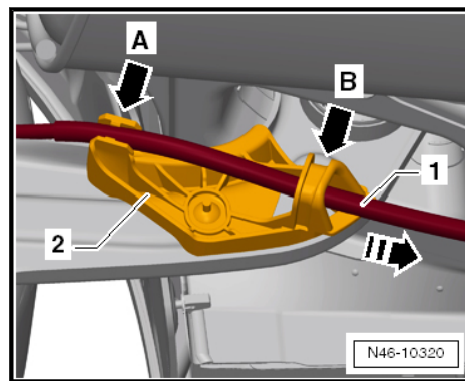


Continuation for All Vehicles

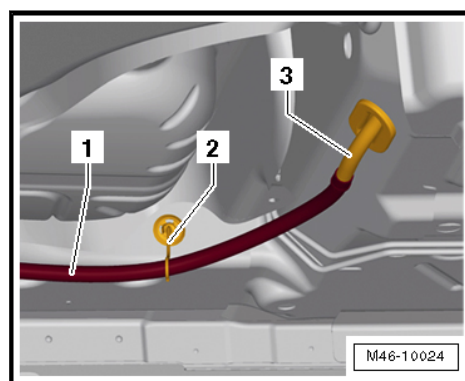
- Press the lever -2- located on the brake caliper in direction of arrow- and disengage the parking brake cable -1-.



- Squeeze the tabs -3- together and remove the parking brake cable from the bracket -4- on the brake caliper.
- Unclip the parking brake cable -1- from the retainer -arrow A- on the bracket -2-.



- Pull the parking brake cable -1- in direction of -arrow- out of the guide -arrow B- on the bracket -2-.
- Disengage the parking brake cable -1- from the bracket -2- and pull it out of the guide tube -3-.



Installing

Install in reverse order of removal. Note the following:

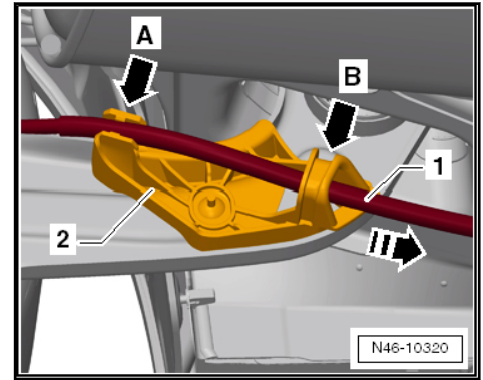
- Slide the parking brake cable -1- into the guide tube -3- and engage it in the bracket -2-.



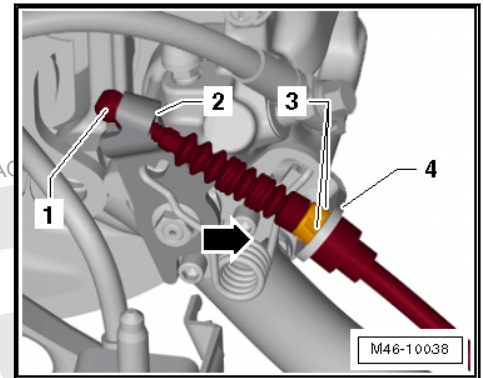
Note

Attach the parking brake cable to at the marking on the cable.

- Insert the parking brake cable -1- into the guide -arrow B- on the bracket -2- opposite the direction of -arrow-.



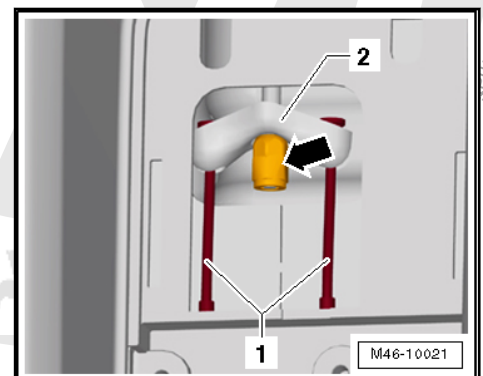
- Clip the parking brake cable -1- into the retainer -arrow A- on the bracket -2-.
- Push the parking brake cable -1- through the bracket -4- on the brake caliper until both tabs -3- engage.



- Press the lever -2- located on the brake caliper in direction of -arrow- and engage the parking brake cable -1-.

The parking brake cable must be installed without tension between the bracket on the brake caliper and the bracket on the rear axle.

- Attach parking brake cable -1- to pull-rod -2-.
- Pretension the parking brake cable using the adjustment nut -arrow-.



- Adjust the parking brake. Refer to ➤ [B3.4.2 rake, Adjusting, Disc Brakes](#), page 253 .



3.4 Parking Brake, Adjusting

⇒ [B3.4.1 rake, Adjusting, Drum Brake", page 252](#)

⇒ [B3.4.2 rake, Adjusting, Disc Brakes", page 253](#)

3.4.1 Parking Brake, Adjusting, Drum Brake



Note

- ◆ *It is not necessary to adjust the parking brake due to automatic adjustment of the drum brakes on the rear axle.*
- ◆ *An adjustment is necessary only after replacing parking brake cables, brake drums, brake carriers or brake pads.*

Perform the Following:

Adjusting

- Raise the vehicle.

Vehicles with the Highline Center Console

- Open the cover on the rear storage compartment.
- Remove the mat from the storage compartment.

Vehicles with the Basic Center Console

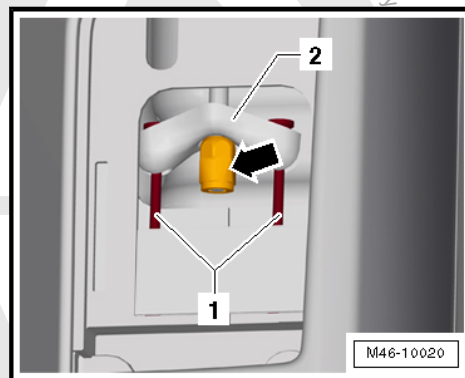
- Remove the mat from the rear storage compartment.

Continuation for Both Vehicles

- Firmly press the brake pedal at least three times.

When Changing Parking Brake Cable

- Attach the parking brake cables -1- to the parking brake lever -item 3- ⇒ [Item 3 \(page 233\)](#).



Continuation for All Vehicles

- Tighten adjusting nut -1- until parking brake lever goes back into rest position by itself under the first detent.
- Tighten hand brake to stop 3 times and then loosen again.

The parking brake lever must automatically go back into the resting position under the first detent.

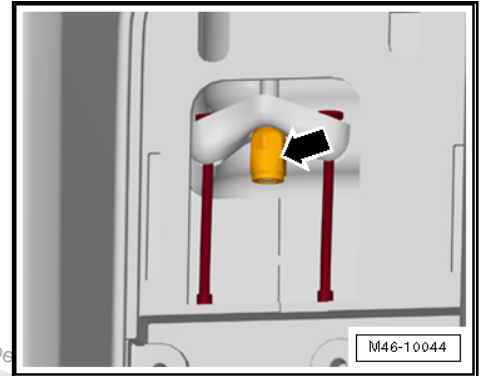


Note

If the parking brake lever does not go back into the rest position by itself, it must be adjusted.



- Parking brake lever in resting position.
- Engage parking brake 2 teeth.
- Tighten the adjusting nut -arrow- enough until both wheels no longer move by hand.



- Release parking brake.
- Parking brake lever in resting position.
- Check whether both wheels turn freely.
- Check to see if the compensator -item 5- ➔ [Item 5 \(page 233\)](#) is standing straight.



Note

When tilting the brakes, check to see that they are fitted correctly.

Due to the automatic rear brake adjuster, there is no need to adjust the parking brake after a new adjustment.

3.4.2 Parking Brake, Adjusting, Disc Brakes



Note

A new adjustment is only necessary after replacing the parking brake cables, brake calipers or brake rotors.

Perform the Following:

Adjusting

- Raise the vehicle.
- Firmly press the brake pedal at least three times.
- Apply the parking brake three times and then release.

The parking brake lever must automatically go back into the resting position under the first detent.

- Parking brake lever in resting position.

Vehicles with the Highline Center Console

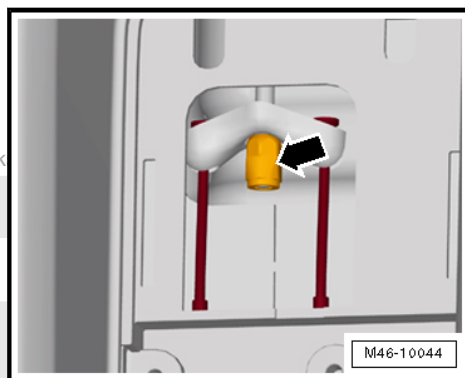
- Open the cover on the rear storage compartment.
- Remove the mat from the storage compartment.

Vehicles with the Basic Center Console

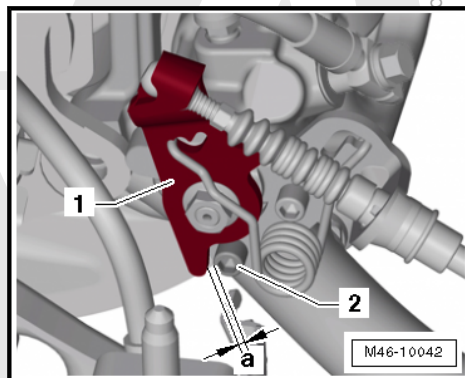
- Remove the mat from the rear storage compartment.



Vehicles with Bosch Rear Brakes.

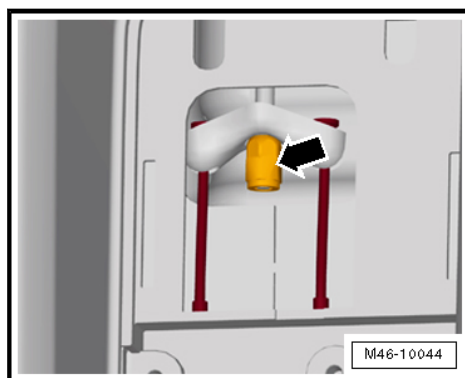


- Adjust the parking brake using the adjusting nut -arrow-.
- Tighten the adjusting nut -arrow- until the levers -1- on the brake calipers lift off from their stops -2-.

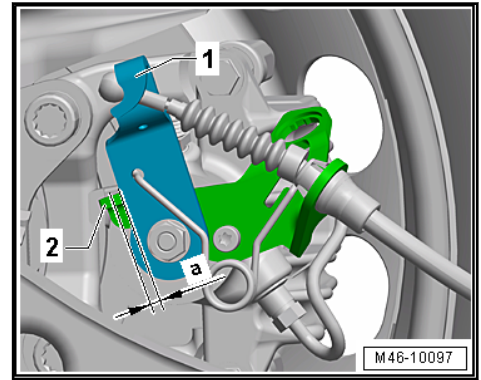


- The distance -a- between the lever -1- to the stop -2- on the left and right brake calipers may be less than or equal to 1.5 mm.
- Check whether both wheels turn freely.

Vehicles with CI 38 Rear Brakes.



- Adjust the parking brake using the adjusting nut -arrow-.
- Tighten the adjusting nut until the lever -1- on the brake calipers lift off from the stops -2-.



- The distance -a- to the stop -2- on the left and right brake caliper must not exceed 1.5 mm together.
- Check whether both wheels turn freely.

Continuation for All Vehicles

Due to the automatic rear brake adjuster, there is no need to adjust the parking brake after a new adjustment.

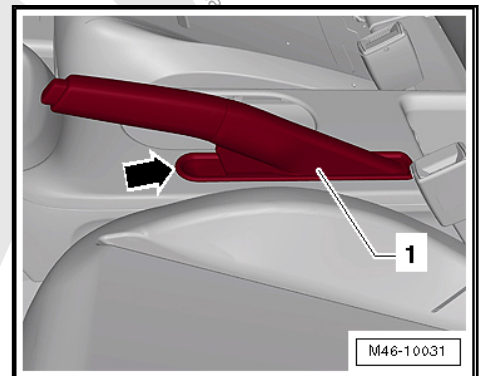
3.5 Parking Brake Lever Trim Panel, Removing and Installing

Special tools and workshop equipment required

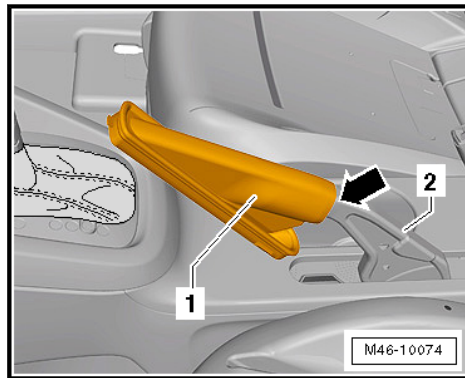
- ◆ Puller - Unit Injector -T10055-
- ◆ Trim Removal Wedge -3409-
- ◆ Assembly Tool -T10488-

Perform the Following:

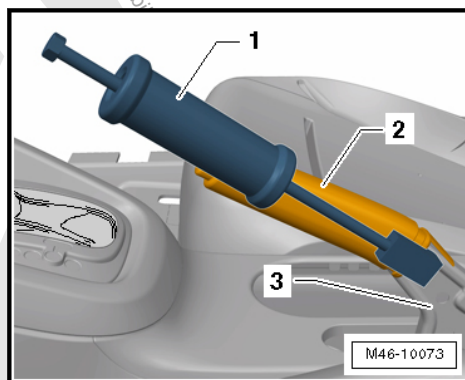
Removing



- Unclip the front parking brake lever trim -1- -arrow-.
- Set the parking brake.



- Roll the parking brake lever trim -1- on the parking brake lever -2- up and over the handle.
- Carefully unclip and remove the parking brake lever trim -1- on the handle -arrow- using the Trim Removal Wedge -3409-.
- Position the Puller - Unit Injector -T10055- -1- on the side of the handle -2-.
- Remove the handle -2- from the parking brake lever -3- using the Puller - Unit Injector -T10055-.



Installing

Install in reverse order of removal. Note the following:



WARNING

Do not reuse the handle for the parking brake lever.



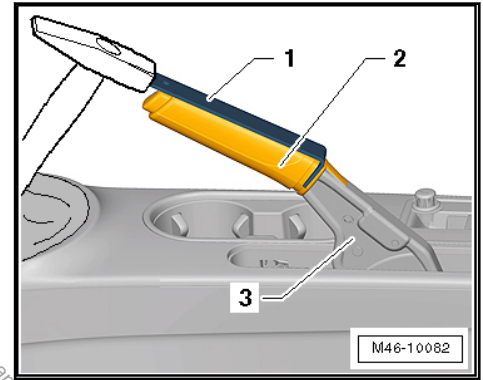
- Set the parking brake.



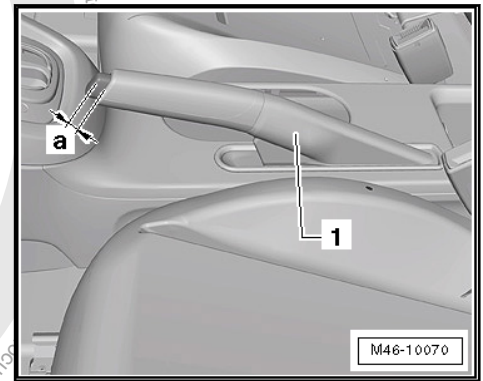
Note

Pay attention to the direction of installation before installing the parking brake lever trim!

- Remove handle -2- and adhesive strip to prevent damage.

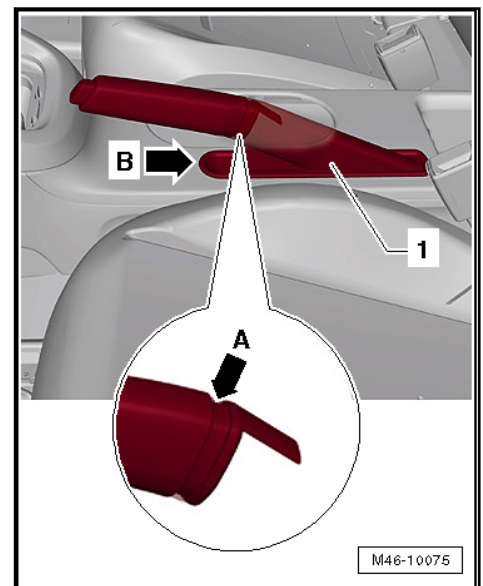


- Install the handle -2- on the parking brake lever -3-.
- Use the Assembly Tool -T10488- -1-.
- Mount the handle carefully on the parking brake lever -1- until dimension -a- is reached.



Maß a - = 10 mm ± 1 mm

- Remove the adhesive tape.
- Pull parking brake lever trim -1- over handle.



- Insert the parking brake lever trim -1- into the groove -arrow A- in the handle.
- Insert the parking brake lever trim -1- into the center console and clip it in the front -arrow B-.



4 Brake Pedal

⇒ [4.1 Brake Pedal", page 258](#)

⇒ [B4.2 racket, Removing and Installing", page 261](#)

⇒ [P4.3 edal, Disconnecting from Brake Booster", page 275](#)

⇒ [P4.4 edal, Attaching to Brake Booster", page 276](#)

⇒ [t4.5 he Tightening Sequence:Brake Pedal, Removing and Installing", page 277](#)

4.1 Overview - Brake Pedal

⇒ [4.1.1 Brake Pedal", page 258](#)

4.1.1 Overview - Brake Pedal



WARNING

The path of the brake pedal must not be shortened by extra floor mats.

Grease all the bearing areas with Polycarbamide Grease -G 052 142 A2- before assembling.



1 - Mounting Bracket

- ☐ Removing and installing. Refer to ➤ [B4.2 rack, Removing and Installing](#), page 261.

2 - Nut

- ☐ 25 Nm
- ☐ Quantity: 6
- ☐ Always replace if removed
- ☐ Note the tightening sequence. Refer to ➤ [page 262](#).

3 - Bearing Bushing

4 - Nut

- ☐ 25 Nm
- ☐ Always replace if removed

5 - Stop Buffer

6 - Brake Pedal

- ☐ Removing and installing. Refer to ➤ [4.5 the Tightening Sequence: Brake Pedal, Removing and Installing](#), page 277.

7 - Cap

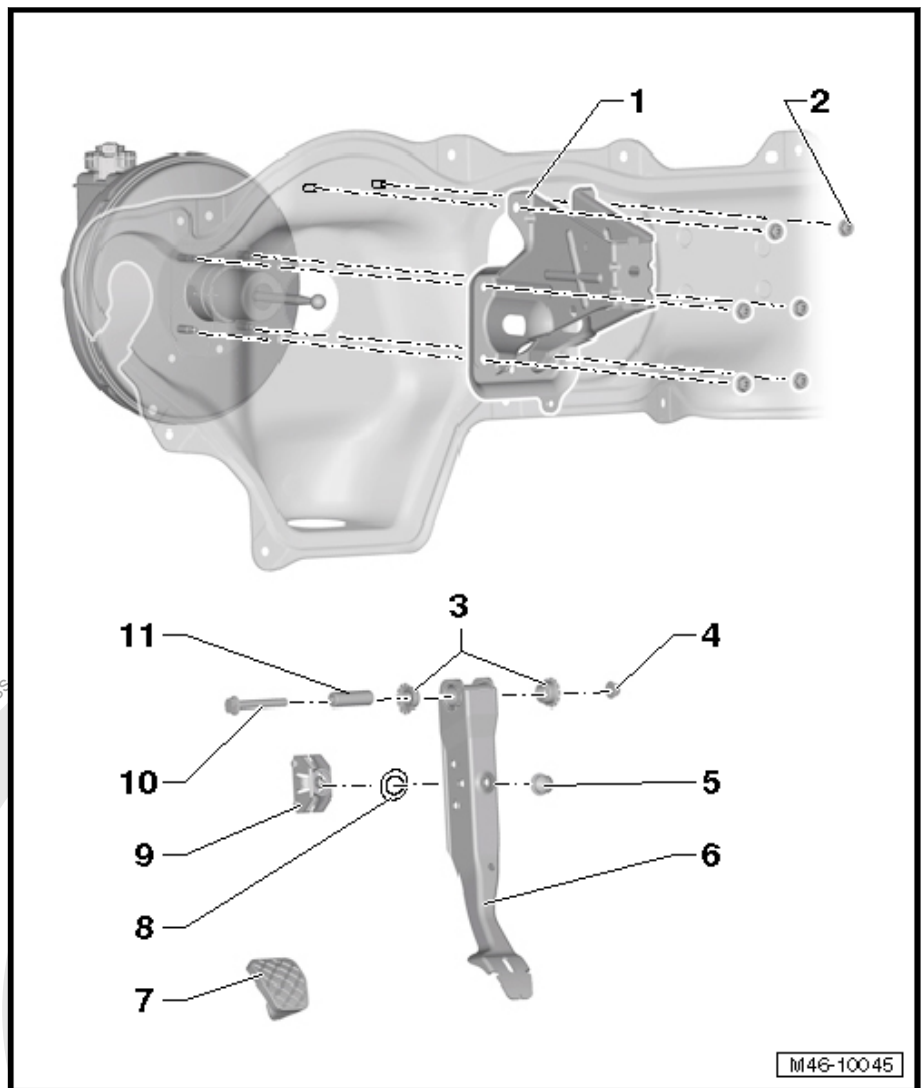
8 - Bearing Shell

9 - Mount

- ☐ For the brake booster push rod ball head
- ☐ Disconnect the ball head from the mount. Refer to ➤ [P4.3 edal, Disconnecting from Brake Booster](#), page 275.
- ☐ Clip the ball head to the mount. Refer to ➤ [P4.4 edal, Attaching to Brake Booster](#), page 276.

10 - Screw

11 - Mounting Pin



4.1.2 Overview - Brake Pedal, RHD

NOT FOR NORTH AMERICAN MARKET



WARNING

The path of the brake pedal must not be shortened by extra floor mats.



Grease all the bearing areas with Polycarbamide Grease -G 052 142 A2- before assembling.

1 - Twelve point bolt

- ☐ 25 Nm
- ☐ Always replace if removed

2 - Mounting Bracket

- ☐ Removing and installing. Refer to ➤ [B4.2 racket, Removing and Installing", page 261](#).

3 - Hex Bolt

- ☐ 25 Nm

4 - Hex Nut

- ☐ 25 Nm
- ☐ Self-locking
- ☐ Always replace if removed

5 - Bearing Bushing

6 - Hex Nut

- ☐ 25 Nm
- ☐ Self-locking
- ☐ Always replace if removed

7 - Brake Pedal

- ☐ Removing and installing. Refer to ➤ [t4.5 he Tightening Sequence: Brake Pedal, Removing and Installing", page 277](#).
- ☐ Brake Pedal, Removing from Brake Booster. Refer to ➤ [P4.3 edal, Disconnecting from Brake Booster", page 275](#).
- ☐ Brake pedal to the brake booster, connecting. Refer to ➤ [P4.4 edal, Attaching to Brake Booster", page 276](#).

8 - Cap

9 - Mounting Pin

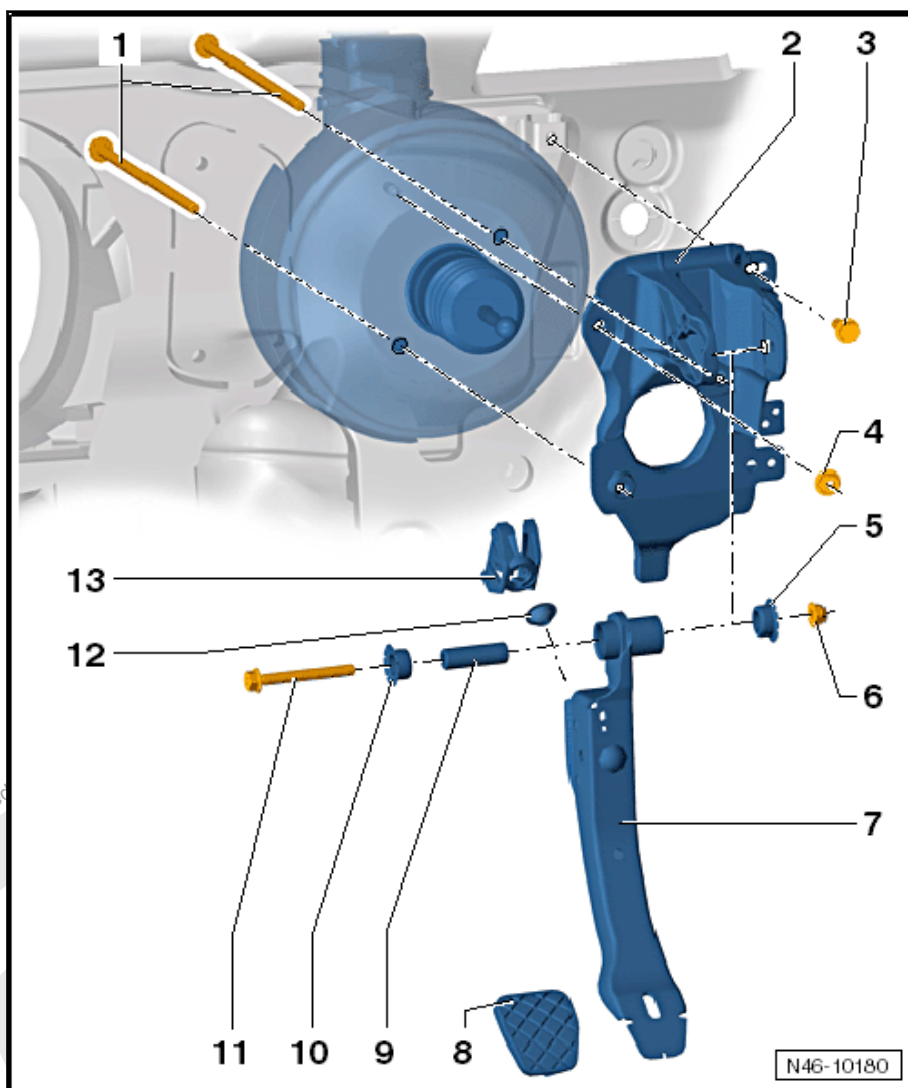
10 - Bearing Bushing

11 - Hex Bolt

12 - Bearing Shell

13 - Mount

- ☐ For the brake booster push rod ball head





4.2 Mounting Bracket, Removing and Installing

⇒ [B4.2.1 racket, Removing and Installing", page 261](#)

⇒ [B4.2.3 racket, Removing and Installing, Hybrid", page 267](#)

4.2.1 Mounting Bracket, Removing and Installing

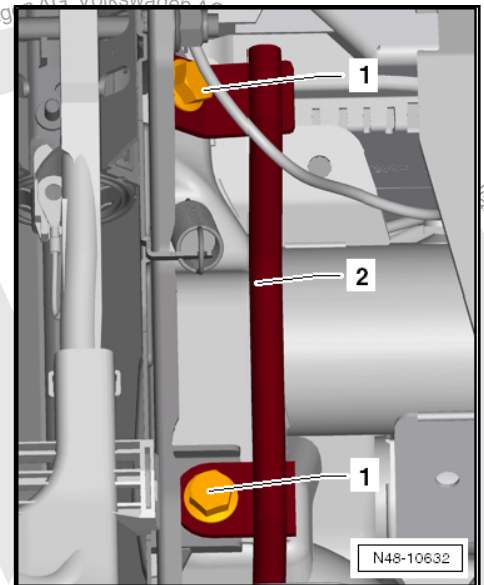
Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-

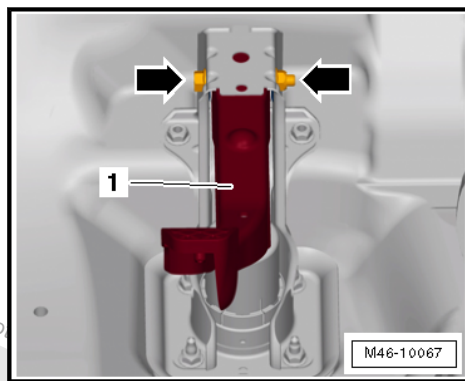
Perform the Following:

Removing

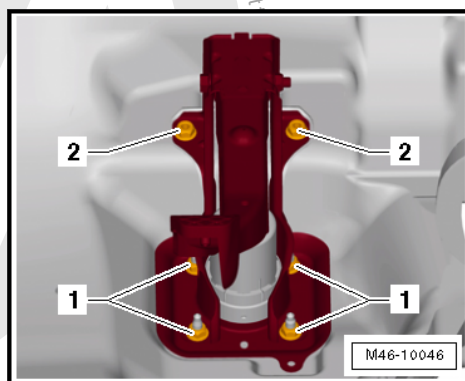
- If equipped, remove the instrument panel trim panel in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.
- Remove the footwell vent on the driver side. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.
- If equipped, remove the crash bolsters -2-. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.



- To do this, remove the right bolts -1- and the brake pedal crash bolster -2-.
- Disconnect the brake pedal from the brake booster. Refer to ⇒ [P4.3 edal, Disconnecting from Brake Booster", page 275](#).
- Remove the threaded connection -arrows- from the brake pedal -1- on the mounting bracket.



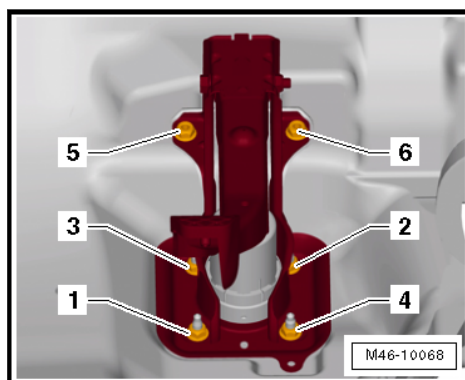
- Remove the brake pedal.
- Remove the threaded connection -1- between the brake booster and the mounting bracket.
- Remove the threaded connection -2- between the bulkhead and the mounting bracket.
- Remove the mounting bracket and pedal assembly.



Installing

Install in reverse order of removal. Note the following:

Follow the Tightening Sequence:



- Tighten nuts -1 through 6- in the sequence shown in the illustration.
- Clip the brake pedal to the brake booster. Refer to [P4.4 edal, Attaching to Brake Booster](#), page 276 .

Tightening Specifications

- ◆ Refer to [-4.1 Brake Pedal](#), page 258



- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48;
Steering Column; Overview - Steering Column.

4.2.2 Mounting Bracket, Removing and Installing, RHD

NOT FOR NORTH AMERICAN MARKET

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-

V.A.G 1331



W00-0427

- ◆ Torque Wrench 1332 40-200Nm -VAG1332-

V.A.G 1332

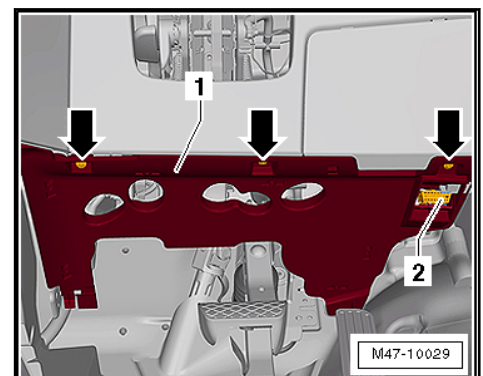


W00-0428

Perform the following:

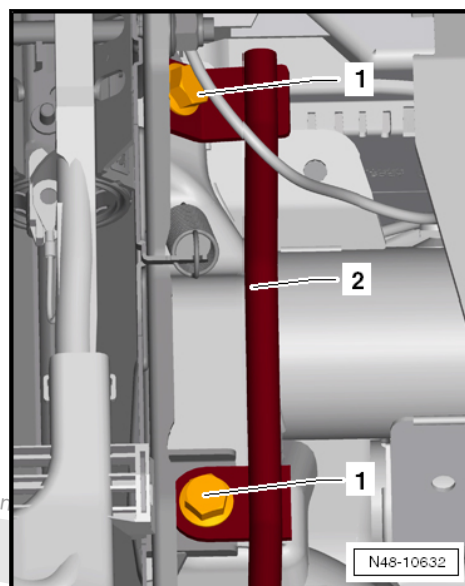
Removing

- If equipped, remove the instrument panel trim panel -1- in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.

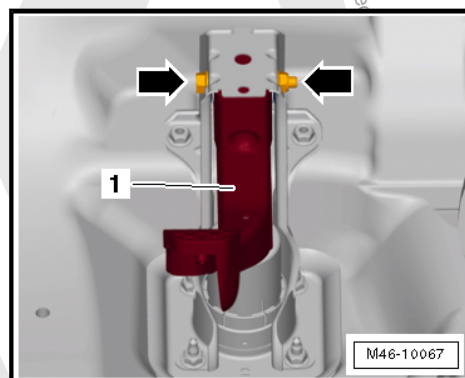




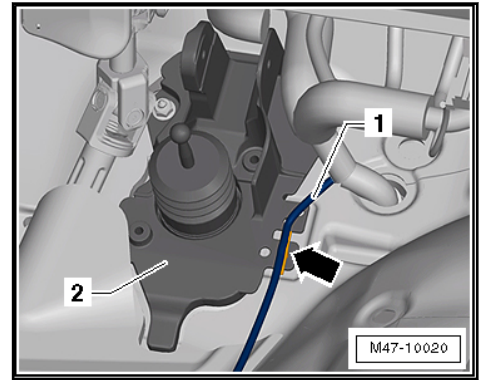
- To do this, remove the bolts -arrows-.
- Remove diagnostic plug -2-.
- Remove the footwell vent on the driver side. Refer to
⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80;
Heater, Disassembling and Assembling; Air Distribution
Housing Lever, Removing and Installing.
- If equipped, remove the crash bolsters -2-. Refer to ⇒ Sus-
pension, Wheels, Steering; Rep. Gr. 48; Steering Column;
Overview - Steering Column.



- To do this, remove bolts -1- and the brake pedal crash bol-
ster -2-.
- Disconnect the brake pedal from the brake booster. Refer to
⇒ [P4.3 edal, Disconnecting from Brake Booster", page 275](#) .
- Remove the threaded connection -arrows- from the brake
pedal -1- on the mounting bracket.

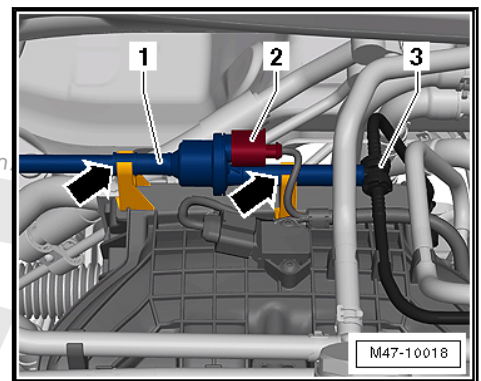


- Remove the brake pedal.
- Remove wiring harness -1- on mounting bracket -2-.

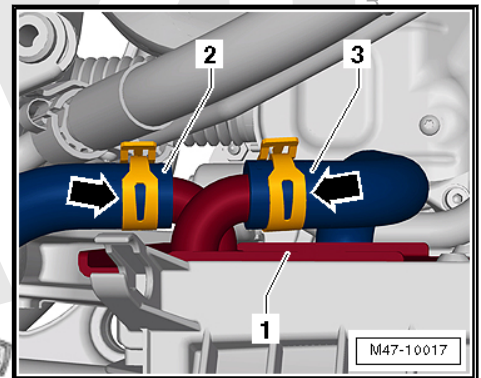


- To do this, unclip wiring harness -1- -arrow-.

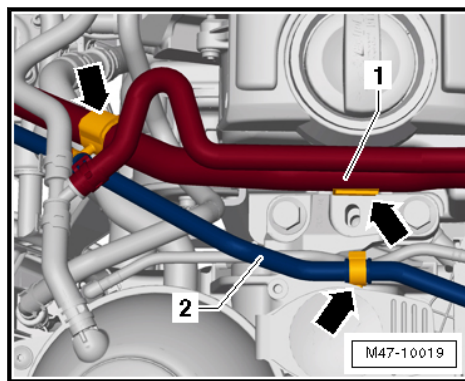
Vehicles with 1.4L 90 kW gasoline engine with turbocharger



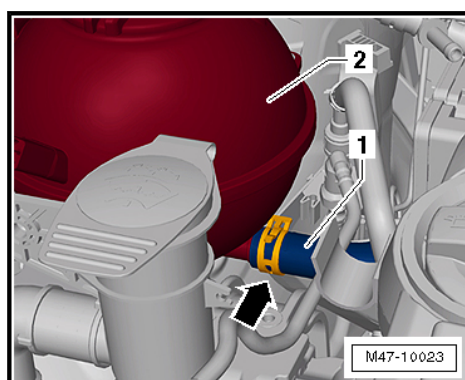
- Disengage connector -2- at wire -1- and remove.
- Unclip wire -1- at intake manifold from brackets -arrows-.
- Remove wire -1- at coupling point -3-.
- Remove coolant hose -2- at charge air cooler -1-.



- To do this, open clamp -arrow-.
- Unclip wire -2- and coolant hoses -1- from brackets -arrows-.

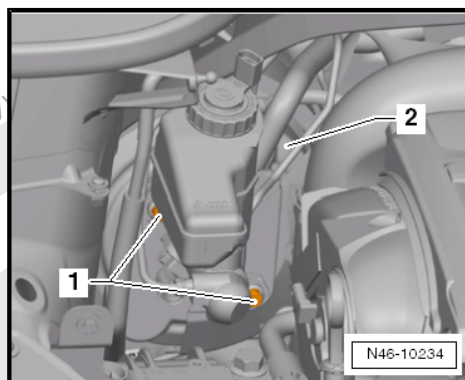


- Set wire -2- and coolant hose -1- aside.
- Remove coolant hose -1- at coolant reservoir -2-.

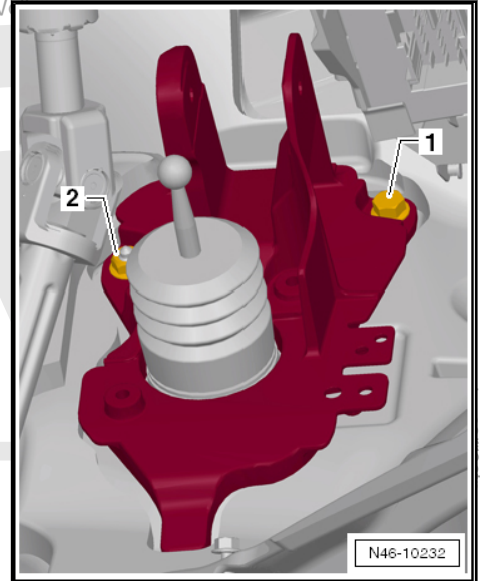


- To do this, open clamp -arrow-.

Continuation for All Vehicles



- Remove the screws -1- from the brake booster -2-.
- Remove the right screw -1- above the brake pedal mount.

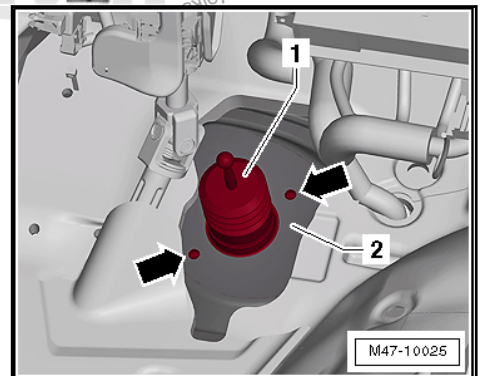


- Remove the left nut -2- under the brake pedal bracket.
- Remove the mounting bracket.

Installing

Install in reverse order of removal. Note the following:

- Make sure that the brake booster -1- sits correctly in the support openings -arrows- on the bulkhead -2-.



- Clip the brake pedal together with the brake booster. Refer to [⇒ P4.4 edal, Attaching to Brake Booster](#), page 276 .
- Check the coolant level. Refer to [⇒ Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling](#).

Tightening Specifications

- ◆ Refer to [⇒ -4.1 Brake Pedal](#), page 258
- ◆ Cooling System. Refer to [⇒ Rep. Gr. 19; Coolant System/Coolant; Connection Diagram - Coolant Hoses](#).
- ◆ Intake Manifold. Refer to [⇒ Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold](#).

4.2.3 Mounting Bracket, Removing and Installing, Hybrid

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-



Perform the Following:

Removing



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.



WARNING

Follow the High-Voltage System General Warnings. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage System General Warnings.



Caution

Follow the notes on working with high-voltage lines. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage System General Warnings.

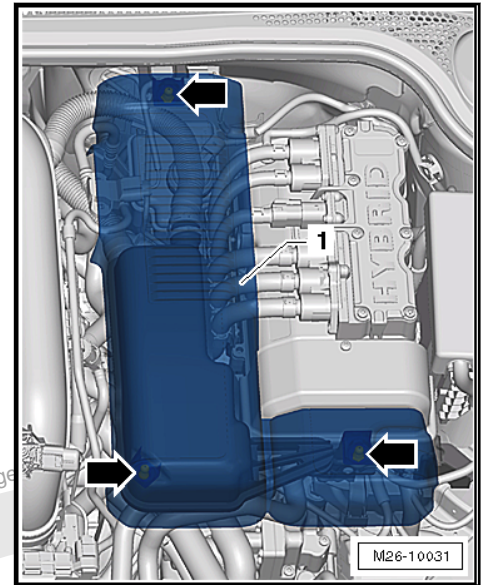


WARNING

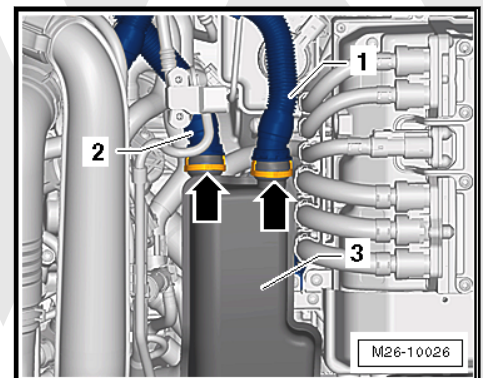
Hybrid vehicles have a high-voltage system! Danger of electrical shock! When performing the following work, it is also necessary to work on the high-voltage system. Disable the high-voltage system now. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage System, De-Energizing.

- Disable the high-voltage system. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage System, De-Energizing.
- Disconnect the 12 V battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.

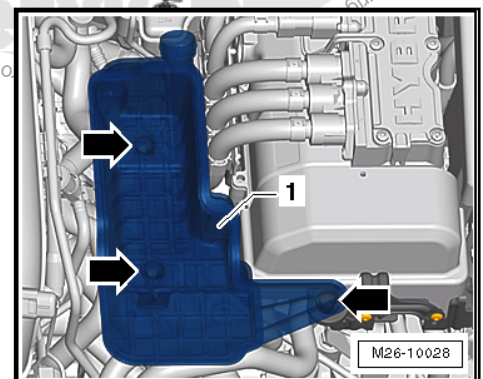
Vehicles with Engine Code CNLA



- Remove the air damper cover -1- from the retainers -arrows-.
- Disconnect the air line -1 and 2- from the air damper -3-.



- Press the locking rings -arrows- together on both sides and disconnect the lines.
- Remove the air damper -1- from the rubber bushings -arrows-.



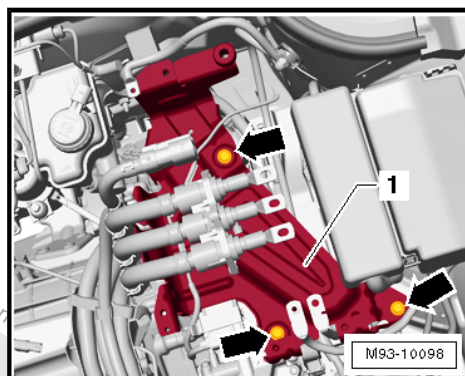
Continuation for All Vehicles

- Remove the Electric Drive Power and Control Electronics -JX1-. Refer to ➔ Electrical System Hybrid; Rep. Gr. 93;

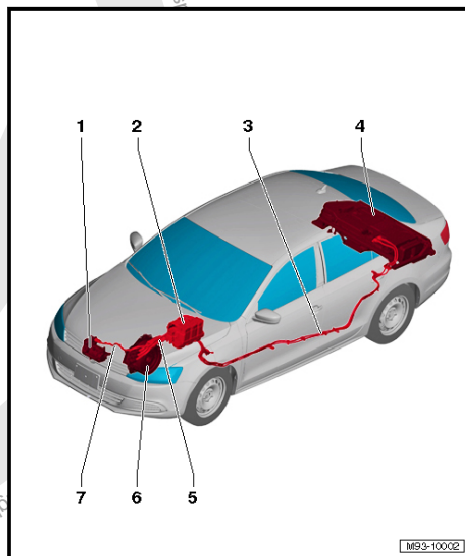


Electric Drive Power and Control Electronics; Electric Drive Output and Control Electronics, Removing and Installing.

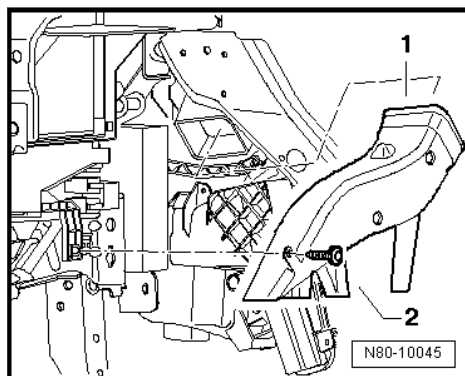
- Remove the bolts -arrows-.



- Remove the bracket -1- for the Electric Drive Power and Control Electronics -JX1-.
- Unclip the high-voltage lines -3 and 5- in the brake booster area and lay aside.

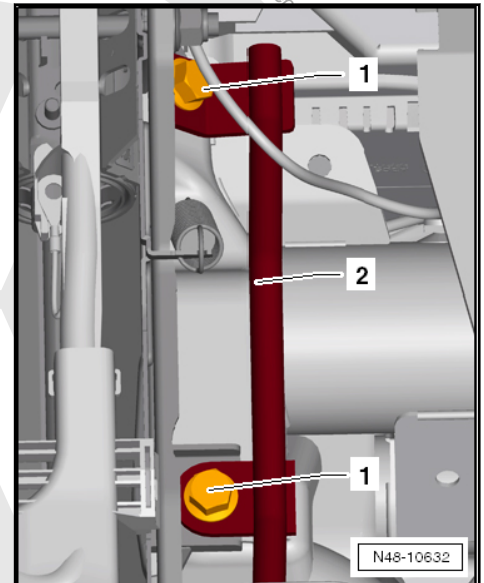


- If equipped, remove the instrument panel trim panel in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.
- Remove the footwell vent on the driver side. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.

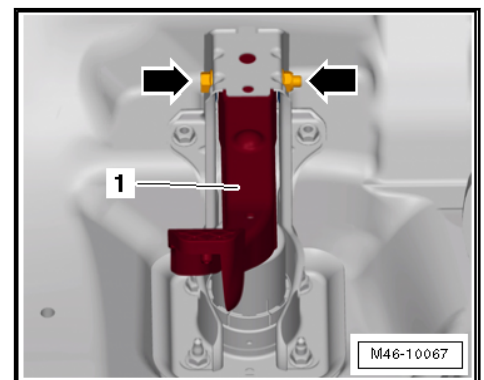




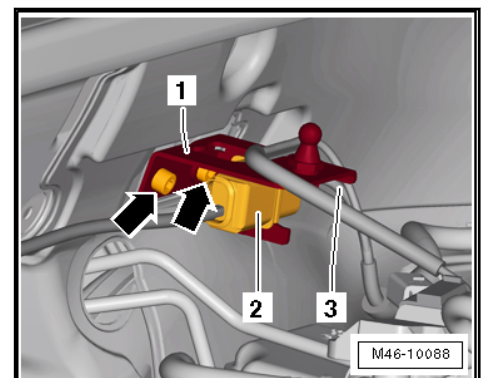
- Remove the bolt -2- and the left footwell vent -1-.
- If equipped, remove the crash bolsters -2-. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.



- To do this, remove the right bolts -1- and the brake pedal crash bolster -2-.
- Disconnect the brake pedal from the brake booster. Refer to ➔ [P4.3 edal, Disconnecting from Brake Booster](#), page 275.
- Remove the threaded connection -arrows- from the brake pedal -1- on the mounting bracket.

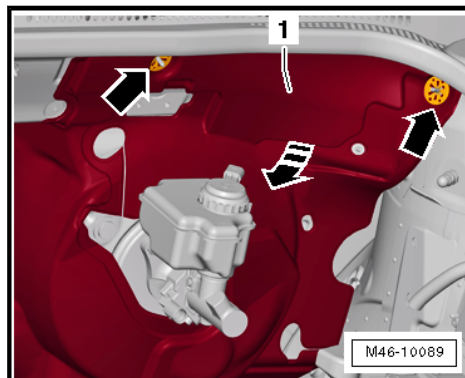


- Remove the brake pedal.
- Release and disconnect the connector -2-.





- Unclip the connector on the bracket -3-.
- Remove the bolts -arrows- and the bracket -3-.
- Unclip the wiring harness on the bulkhead.
- Remove the star-shaped washers -arrows-.



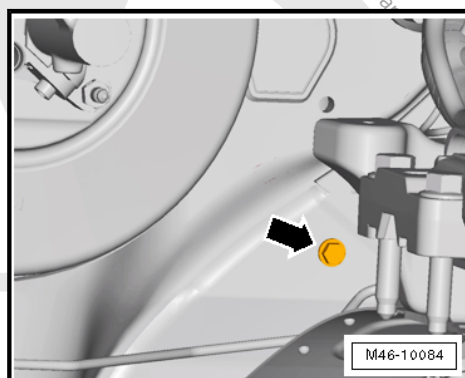
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



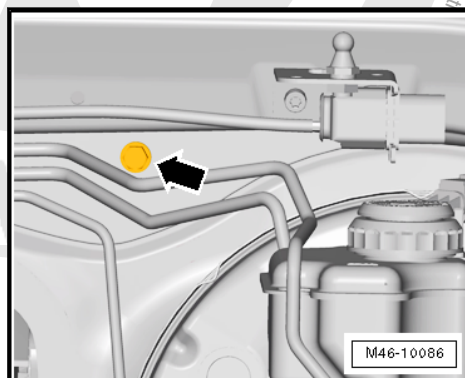
Note

It is not necessary to remove the insulation.

- Remove the lower left bolt -arrow- on the bulkhead.



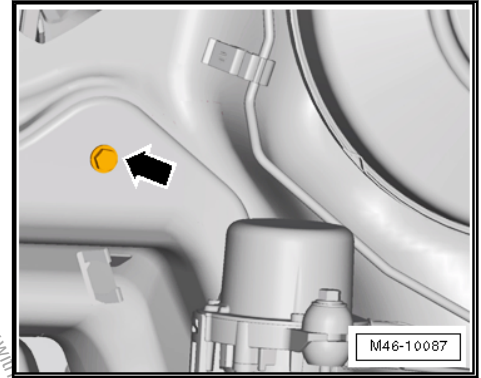
- Remove the upper center bolt -arrow- on the bulkhead.



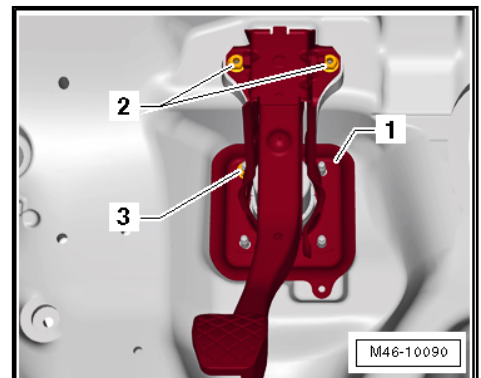
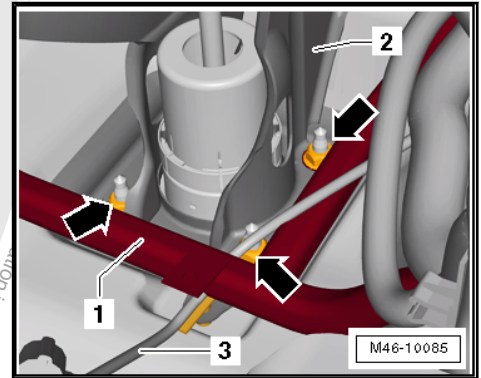
- Remove the lower center bolt -arrow- on the bulkhead.



- Remove the nuts -arrows- on the brace -1-.



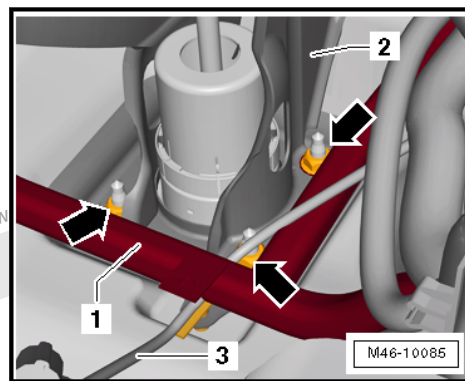
- Unclip the wiring harness -3- on the mounting bracket.
- Remove the brace -1- on the mounting bracket -2- and move downward.
- Remove the nuts -2 and 3- on the mounting bracket -1-.
- Remove the mounting bracket -1-.



Installing

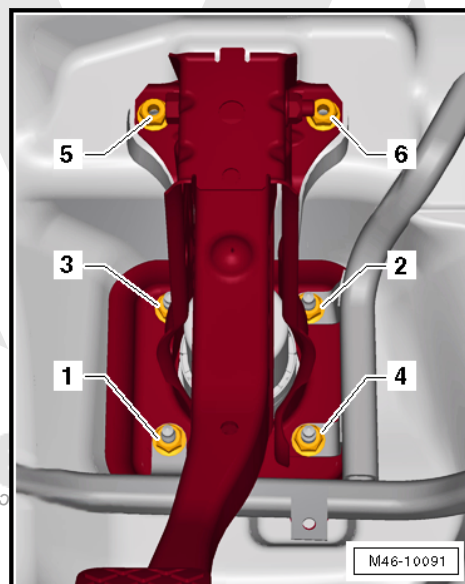
Install in reverse order of removal. Note the following:

- Position the mounting bracket -2- on the threaded pins.



- Position the brace -1- on the threaded pin and thread on the nuts -arrows-.
- Clip the wiring harness -3- onto the mounting bracket.

Follow the Tightening Sequence:



- Tighten nuts -1 through 6- in the sequence shown in the illustration.
- Clip the brake pedal to the brake booster. Refer to [P4.4 edal, Attaching to Brake Booster](#), page 276 .
- Fill the coolant. Refer to [Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling](#).

Tightening Specifications

- ◆ Refer to [-4.1.1 Brake Pedal](#), page 258
- ◆ Refer to [Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column](#).
- ◆ Refer to [Body Interior; Rep. Gr. 70; Instrument Panel](#)
- ◆ Refer to [Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing](#).
- ◆ Refer to [-3.1 Brake Booster/Brake Master Cylinder](#), page 304
- ◆ Refer to [Rep. Gr. 26; Secondary Air System; Overview - Secondary Air Injection System](#).



- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; Component Location Overview - High Voltage Components.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; Electric Drive Power and Control Electronics; Component Location Overview - Electric Drive Power and Control Electronics.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage Cables; Component Location Overview - High Voltage Cables.

4.3 Brake Pedal, Disconnecting from Brake Booster

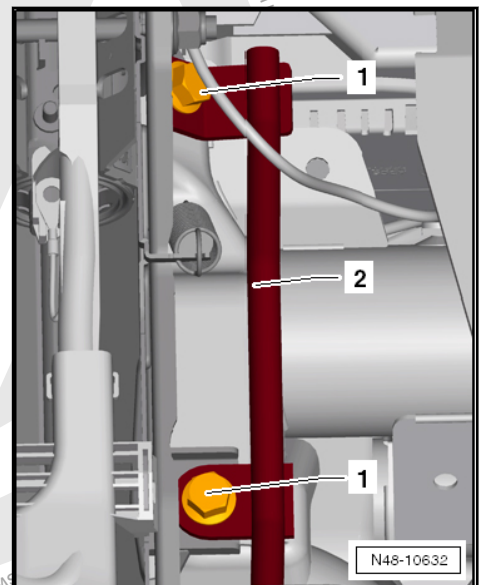
Special tools and workshop equipment required

- ◆ Release Tool - Brake Servo -T10159-/Brake Servo Release Tool -T10159A-

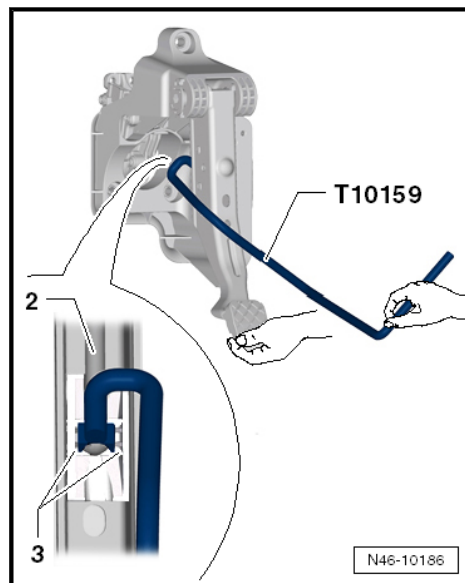
Perform the Following:

Removing

- If equipped, remove instrument panel trim panel in footwell.
- If equipped, remove the crash bolsters -2-. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.



- To do this, remove the right bolts -1- and the brake pedal crash bolster -2-.
- Press and hold the brake pedal in the direction of the brake booster.



2 - Push Rod

3 - Retaining Tabs

- Insert the Release Tool - Brake Servo -T10159- and pull it toward the driver seat while applying counter pressure against the brake pedal.



Note

- ♦ *The pedal assembly must not move toward the rear while doing this.*
- ♦ *This will cause the tabs -3- to be pushed out of the push rod ball head mount -2-.*
- Pull the Brake Servo Release Tool -T10159A- and brake pedal together in the direction of the driver seat.

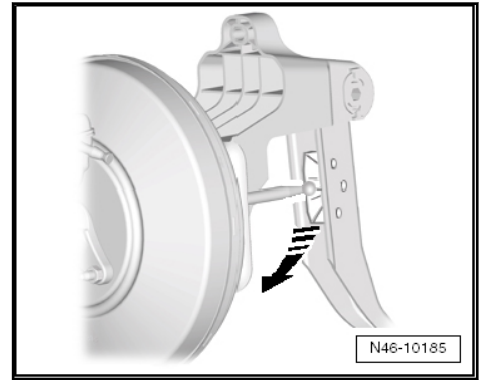
This will pull the brake pedal off.

4.4 Brake Pedal, Attaching to Brake Booster

Perform the Following:

Removing

- Hold the pushrod ball head in front of the mount and push the brake pedal toward the brake booster so that the ball head engages audibly.
- Check the engagement by pulling briefly on the brake pedal.



Tightening Specifications

- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.

4.5 Follow the Tightening Sequence: Brake Pedal, Removing and Installing

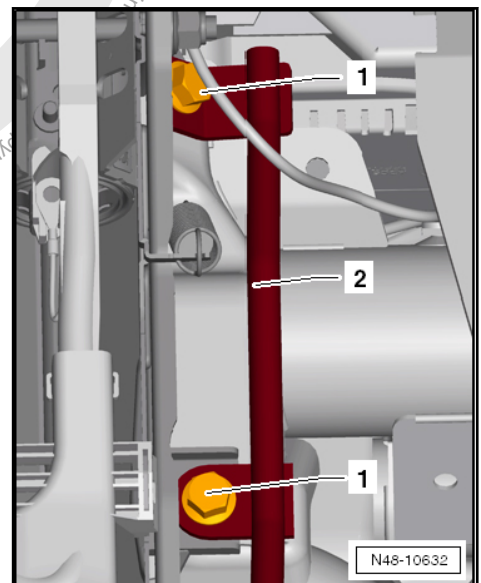
⇒ [P4.5.1 edal, Removing and Installing", page 277](#)

4.5.1 Brake Pedal, Removing and Installing

Perform the Following:

Removing

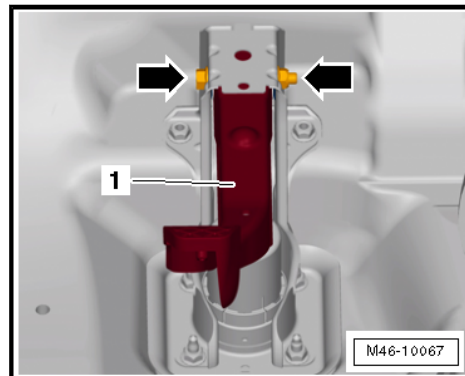
- If equipped, remove the instrument panel trim panel in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.
- Remove the footwell vent on the driver side. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.
- If equipped, remove the crash bolsters -2-. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.



- To do this, remove the right bolts -1- and the brake pedal crash bolster -2-.



- Disconnect the brake pedal from the brake booster. Refer to ➔ [P4.3 edal, Disconnecting from Brake Booster", page 275](#) .
- Remove the threaded connection -arrows- from the brake pedal -1- on the mounting bracket.
- Remove the brake pedal.



Installing

Install in reverse order of removal. Note the following:

- Clip the brake pedal to the brake booster. Refer to ➔ [P4.4 edal, Attaching to Brake Booster", page 276](#) .

Tightening Specifications

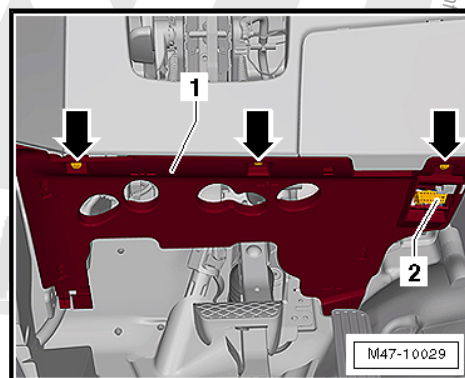
- ◆ Refer to ➔ [-4.1 Brake Pedal", page 258](#)
- ◆ Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.

4.5.2 Brake Pedal, Removing and Installing, RHD Vehicle

NOT FOR NORTH AMERICAN MARKET

Removing

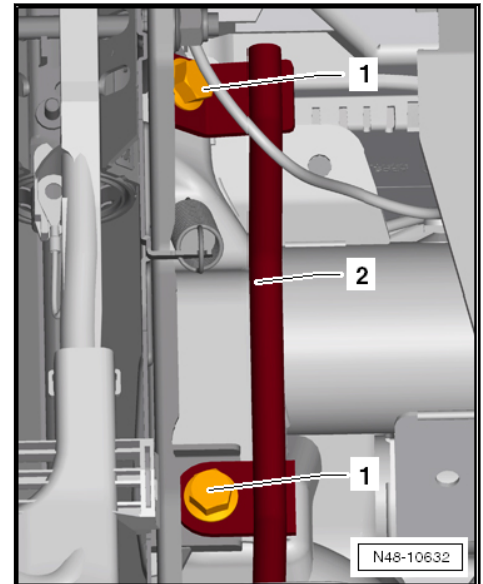
- If equipped, remove the instrument panel trim panel -1- in the driver footwell. Refer to ➔ Body Interior; Rep. Gr. 70; Instrument Panel.



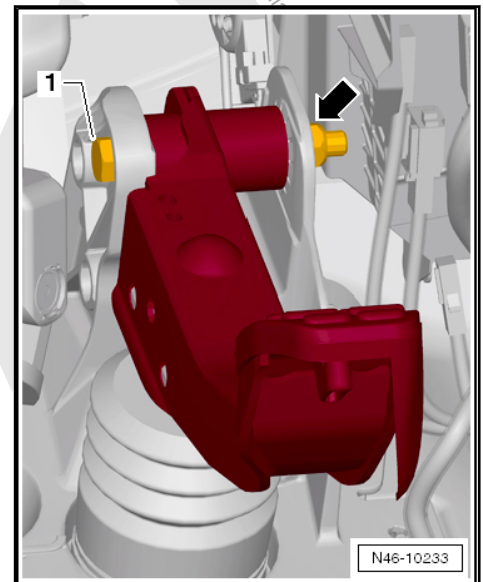
- To do this, remove the bolts -arrows-.
- Remove diagnostic plug -2-.



- Remove the footwell vent on the driver side. Refer to
⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80;
Heater, Disassembling and Assembling; Air Distribution
Housing Lever, Removing and Installing.
- If equipped, remove the crash bolsters -2-. Refer to ⇒ Sus-
pension, Wheels, Steering; Rep. Gr. 48; Steering Column;
Overview - Steering Column.



- To do this, remove the right bolts -1- and the brake pedal
crash bolster -2-.
- Disconnect the brake pedal from the brake booster. Refer to
⇒ [P4.3 pedal, Disconnecting from Brake Booster](#), page 275 .
- Remove bolt -1- for brake pedal to the left.



- Counterhold at the nut -arrow-.
- Remove the brake pedal.

Installing

- Install in reverse order of removal. Note the following:



- Clip the brake pedal together with the brake booster. Refer to ➔ [P4.3 edal, Disconnecting from Brake Booster”, page 275](#).

Tightening Specifications


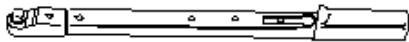
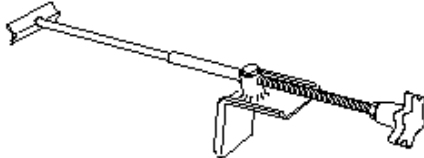
- ◆ Refer to ➔ [-4.1 Brake Pedal”, page 258](#)
- ◆ Crash bolsters. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview - Steering Column.







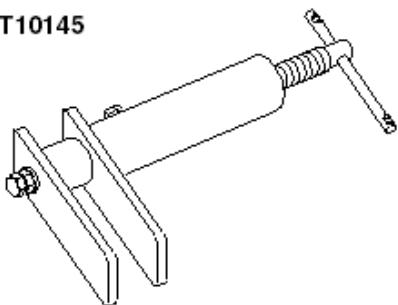
5 Special Tools

Special tools and workshop
equipment required

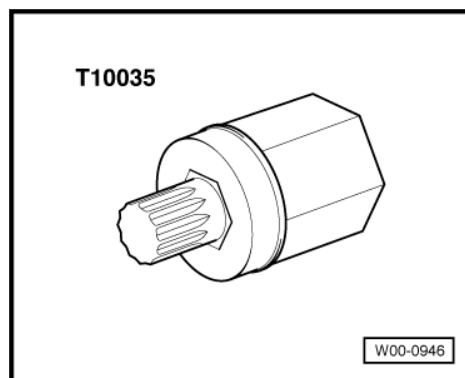
<p>V.A.G 1331</p> 	<p>V.A.G 1332</p> 
<p>V.A.G 1869/2</p> 	
	<p>W46-10001</p>

- ◆ Torque Wrench 5-50Nm -VAG1331-
- ◆ Torque Wrench 40-200Nm -VAG1332-
- ◆ Brake Pedal Actuator -VAG1869/2-



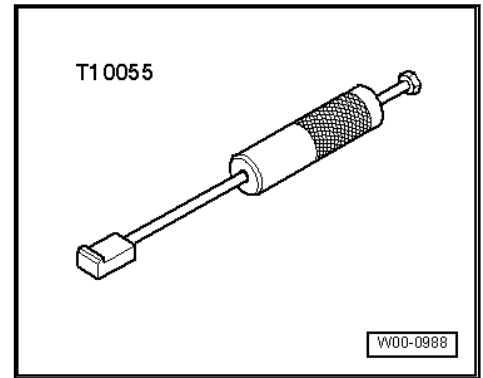
V.A.G 1331 	V.A.G 1332 
T10145 	
	W46-10002

- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Torque Wrench 1332 40-200Nm -VAG1332-
- ◆ Piston Resetting Tool -T10145-
- ◆ Multipoint Socket -T10035-

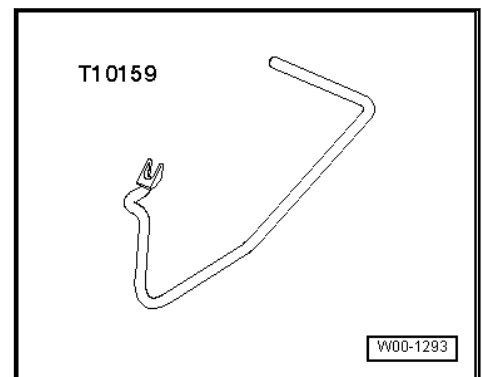




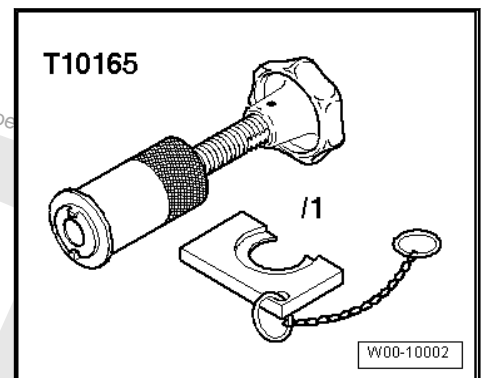
◆ Puller -T10055-



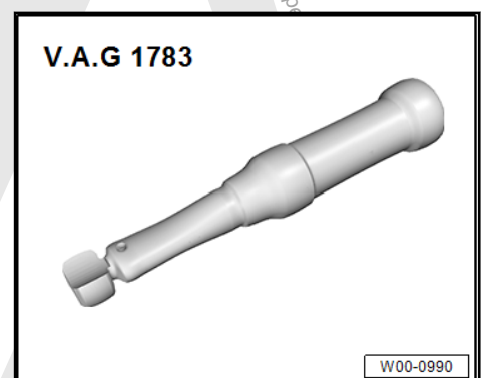
◆ Release Tool -T10159A-



◆ Brake Caliper Tool -T10165-

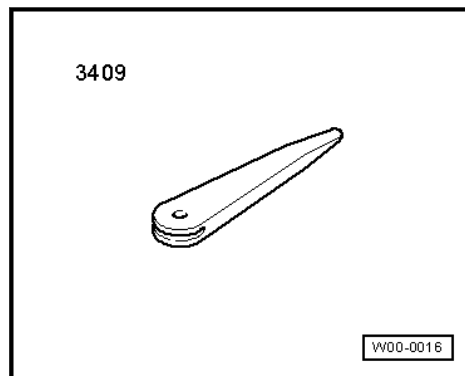


◆ Torque Wrench 1783 - 2-10Nm -VAG1783-

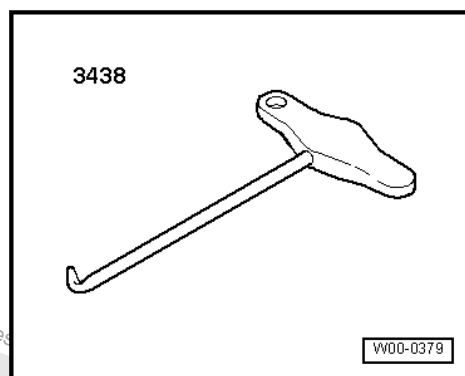




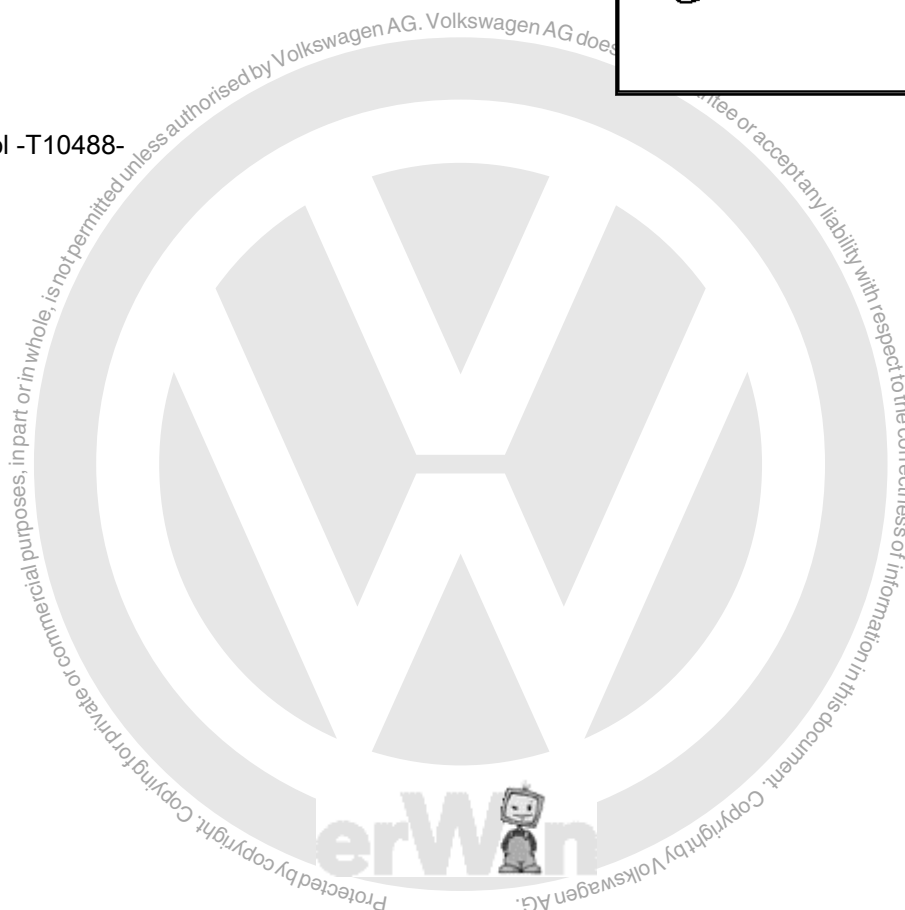
◆ Trim Removal Wedge -3409-



◆ Hook -3438-



◆ Assembly Tool -T10488-





47 – Hydraulic Components

1 Front Brake Caliper

⇒ -1.1 Front Brake Caliper", page 285

⇒ C1.2 aliper Piston, Removing and Installing", page 287

1.1 Overview - Front Brake Caliper

⇒ -1.1.1 Front Brake Caliper, FS III Brake Caliper", page 285

⇒ -1.1.2 Front Brake Caliper, FN 3 Brake Caliper", page 286

1.1.1 Overview - Front Brake Caliper, FS III Brake Caliper

- ◆ Install the entire repair kit when servicing.
- ◆ Only use mineral spirits to clean the brakes.
- ◆ Apply a thin coat of Assembly Paste -G 052 150 A2- to brake cylinders, pistons and seals.



1 - Dust Cap

- ☐ Attach to breather valve

2 - Breather Valve

- ☐ 10 Nm
- ☐ Lightly grease the threads with Assembly Paste -G 052 150 A2- before installing.

3 - Caps

- ☐ Insert in bushing

4 - Guide Pin

- ☐ 30 Nm

5 - Bearing Bushing

- ☐ Insert in brake caliper

6 - Brake Caliper

7 - Cap

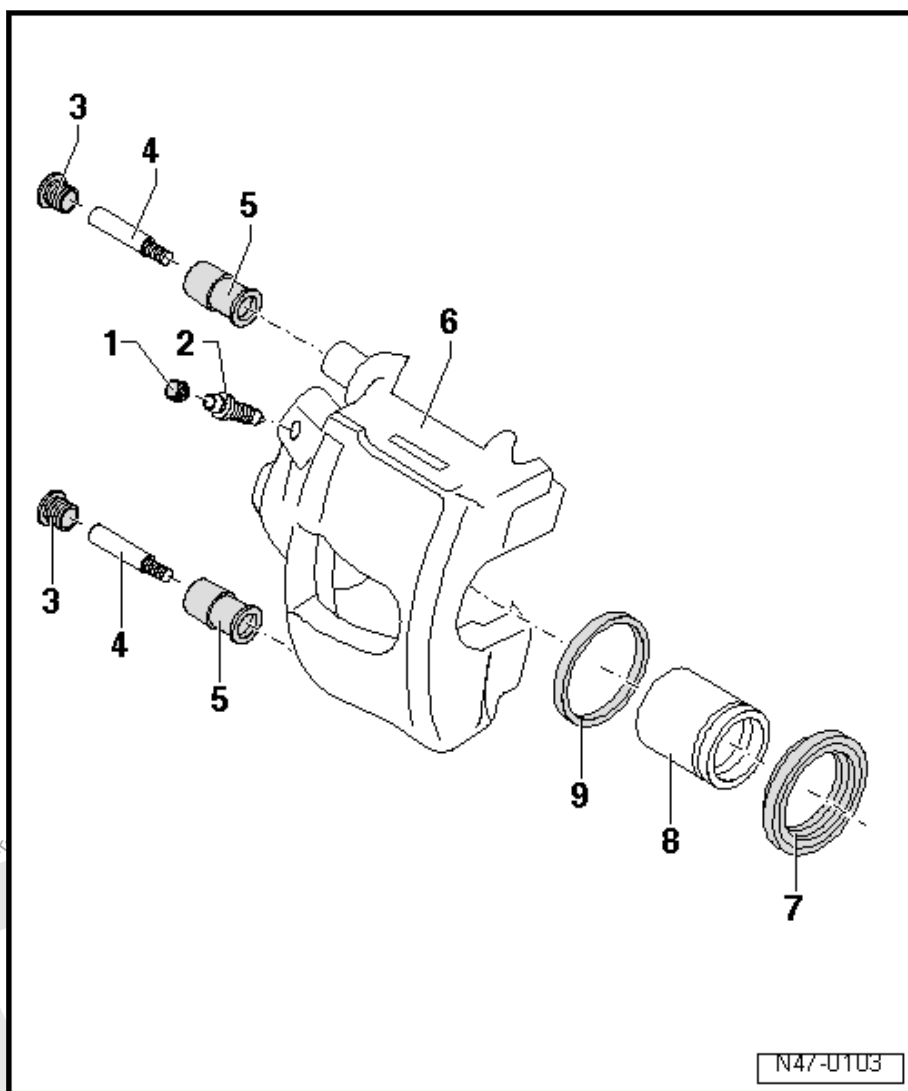
- ☐ Removing and installing. Refer to ➤ [C1.2.1 aliper Piston, Removing and Installing, FS III Brake Caliper Piston", page 287](#) .
- ☐ Do not damage when inserting the piston

8 - Piston

- ☐ Removing and installing. Refer to ➤ [C1.2.1 aliper Piston, Removing and Installing, FS III Brake Caliper Piston", page 287](#) .
- ☐ Apply a thin coat of Assembly Paste -G 052 150 A2- to piston beforehand

9 - Seal

- ☐ Removing and installing. Refer to ➤ [C1.2.1 aliper Piston, Removing and Installing, FS III Brake Caliper Piston", page 287](#) .



1.1.2 Overview - Front Brake Caliper, FN 3 Brake Caliper

- ◆ Install the entire repair kit when servicing.
- ◆ Only use mineral spirits to clean the brakes.
- ◆ Apply a thin coat of Assembly Paste -G 052 150 A2- to brake cylinders, pistons and seals.



1 - Dust Cap

- ☐ Attach to breather valve

2 - Breather Valve

- ☐ 10 Nm
- ☐ Lightly grease the threads with Assembly Paste -G 052 150 A2- before installing.

3 - Caps

- ☐ Insert in bushing

4 - Guide Pin

- ☐ 30 Nm

5 - Bearing Bushing

- ☐ Insert in brake caliper

6 - Brake Caliper

7 - Brake Carrier

- ☐ Bolt to brake caliper

8 - Spring

- ☐ Insert both ends into the holes in the brake caliper

9 - Seal

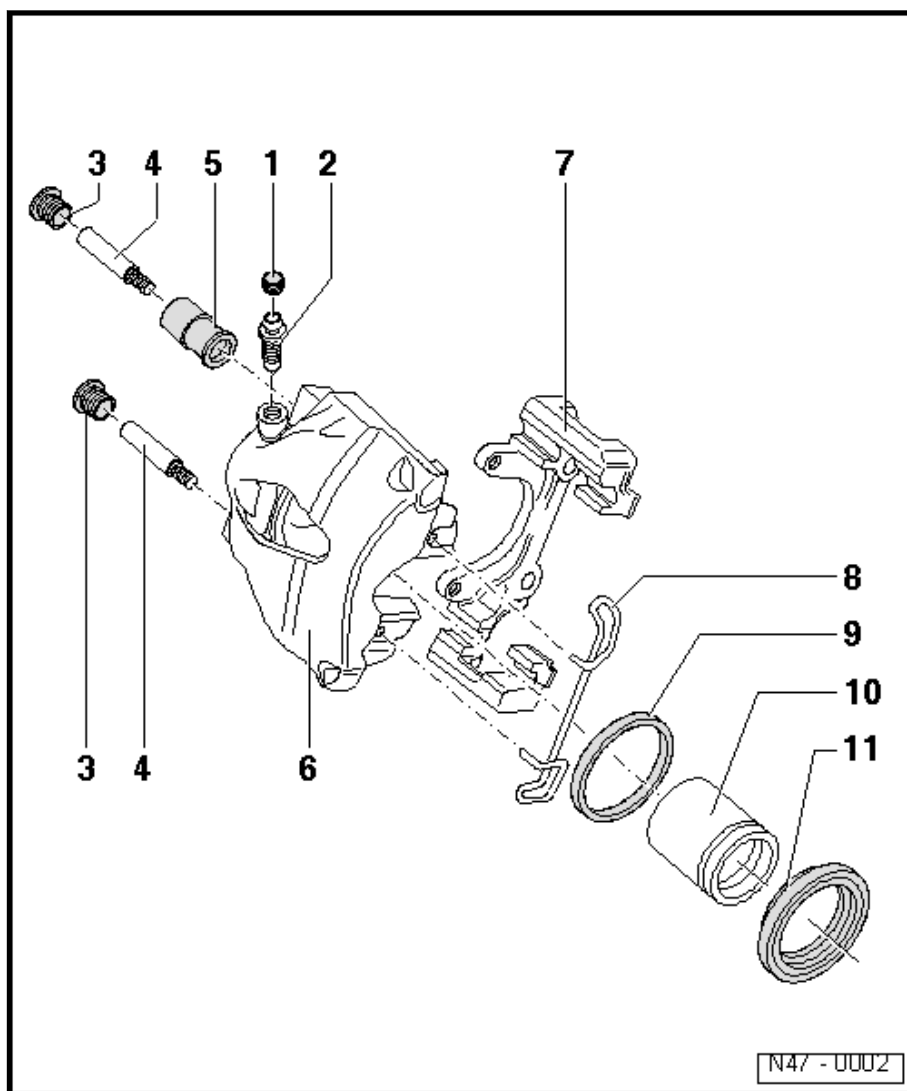
- ☐ Removing and installing. Refer to ➤ [C1.2.2 aliper Piston, Removing and Installing, Brake Caliper Piston FN 3", page 290](#) .

10 - Piston

- ☐ Removing and installing. Refer to ➤ [C1.2.2 aliper Piston, Removing and Installing, Brake Caliper Piston FN 3", page 290](#) .
- ☐ Apply a thin coat of Assembly Paste -G 052 150 A2- to piston beforehand

11 - Cap

- ☐ Removing and installing. Refer to ➤ [C1.2.2 aliper Piston, Removing and Installing, Brake Caliper Piston FN 3", page 290](#) .
- ☐ Do not damage when inserting the piston



1.2 Brake Caliper Piston, Removing and Installing

➤ [C1.2.1 aliper Piston, Removing and Installing, FS III Brake Caliper Piston", page 287](#)

➤ [C1.2.2 aliper Piston, Removing and Installing, Brake Caliper Piston FN 3", page 290](#)

1.2.1 Brake Caliper Piston, Removing and Installing, FS III Brake Caliper Piston

Special tools and workshop equipment required

- ◆ Trim Removal Wedge -3409-



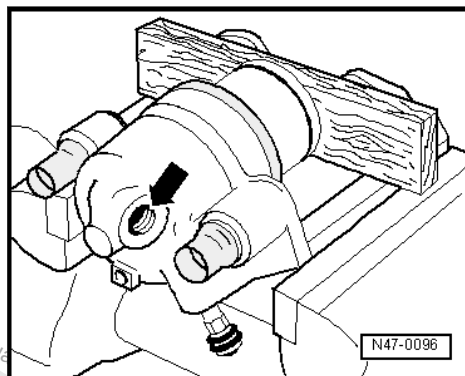
◆ Piston Resetting Tool -T10145-

Perform the Following:

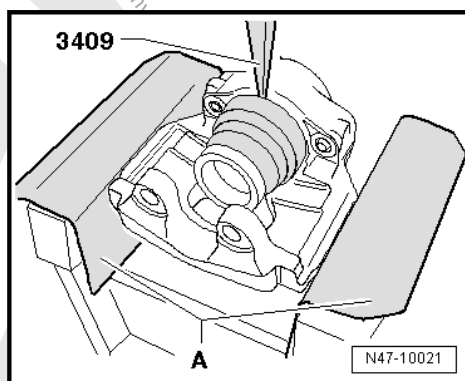
Removing

- Use compressed air to push the piston out of the brake caliper.

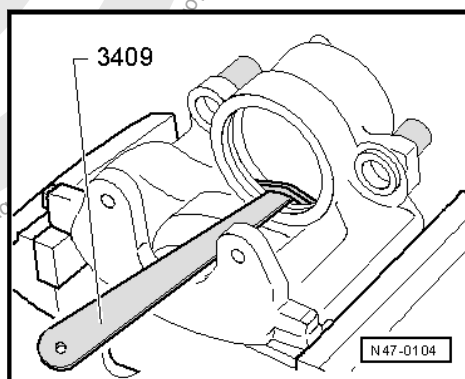
Place a Wooden Board into the Recess so the Piston Is Not Damaged.



- Remove the cap from the brake caliper using the Trim Removal Wedge -3409-.



- Remove the gasket using the Trim Removal Wedge -3409-.



When removing, make sure that the cylinder surface is not damaged.

Installing

Install in reverse order of removal. Note the following:



Cleaning



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

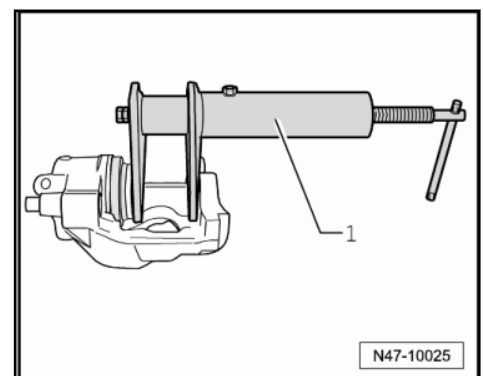
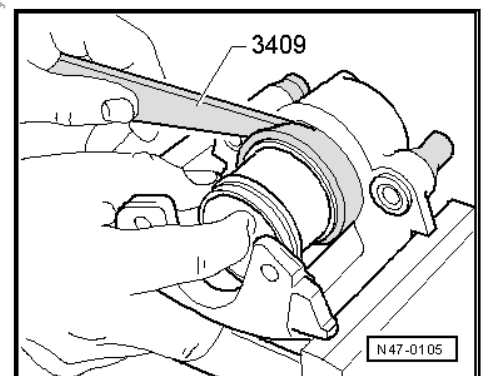
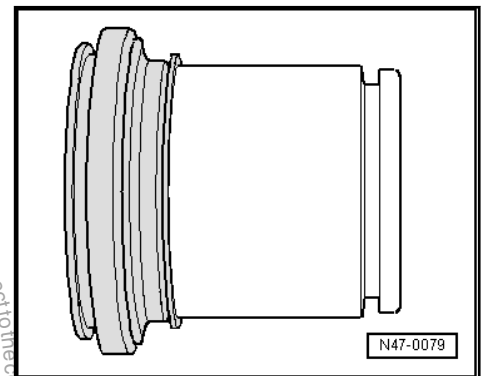
Only Use Mineral Spirits for Cleaning the Brake System.

- Thinly coat the piston and the seal with Assembly Paste -G 052 150 A2- before installing.
- Insert the seal in brake caliper.
- Place the cap with the outer sealing lip on the piston.

- Insert the inner sealing lip in the cylinder groove using the Trim Removal Wedge -3409-.

Hold the piston in front of the brake caliper for this procedure.

- Press the piston into the brake caliper using piston resetting tool.





1 - Piston Resetting Tool -T10145-

The outer sealing lip of the cap thereby slips into the groove on the piston.

1.2.2 Brake Caliper Piston, Removing and Installing, Brake Caliper Piston FN 3

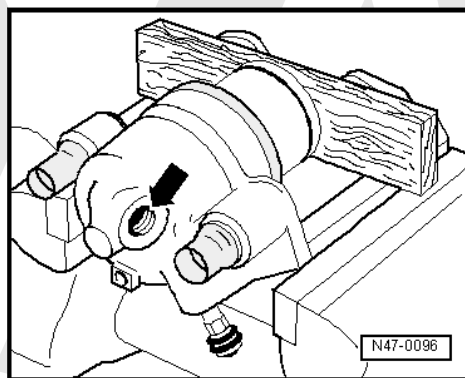
Special tools and workshop equipment required

- ◆ Trim Removal Wedge -3409-
- ◆ Piston Resetting Tool -T10145-
- ◆ Piston Resetting Tool - Cap /6 -T10146/6-

Perform the Following:

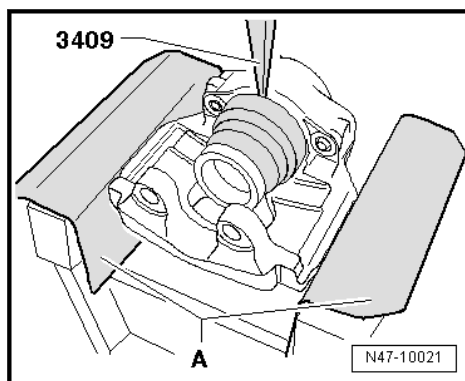
Removing

- Push piston out of brake caliper using compressed air -arrow-.



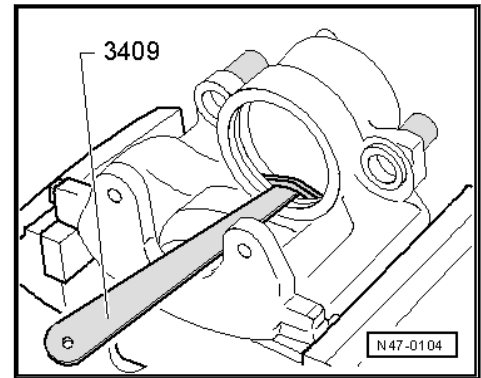
Place a Wooden Board into the Recess so the Piston Is Not Damaged.

- Remove the cap from the brake caliper using the Trim Removal Wedge -3409-.



- Remove the gasket using the Trim Removal Wedge -3409-.

When removing, make sure that the cylinder surface is not damaged.



Installing

Install in reverse order of removal. Note the following:

Cleaning

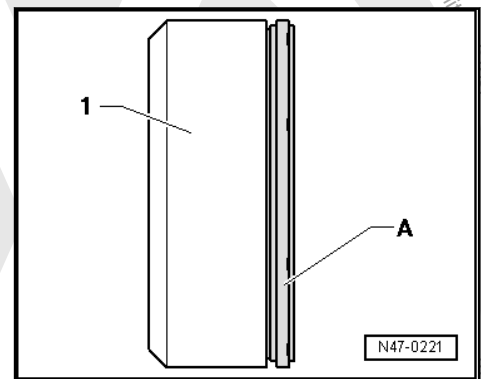


WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

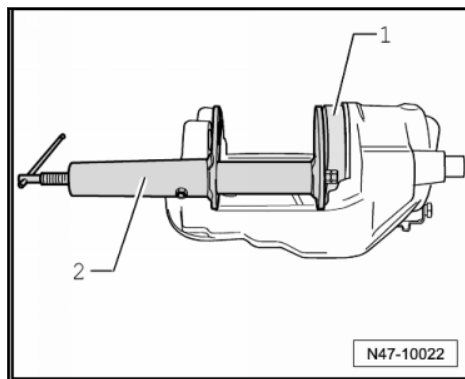
Only Use Mineral Spirits for Cleaning the Brake System.

- The surface of the piston and seal must only be cleaned with mineral spirits and then dried.
- Apply a thin coat of Assembly Paste -G 052 150 A2- on the piston and the seal before installing.
- Insert the seal in brake caliper.
- Insert the cap -A- in the tool.



1 - Piston Resetting Tool - Cap /6 -T10146/6-

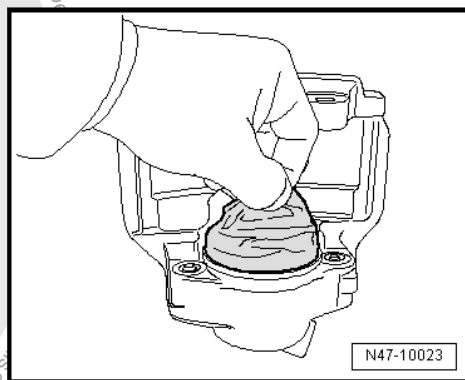
- Press the cap onto the brake caliper, using the tool, so that it is touching the brake caliper all the way around.



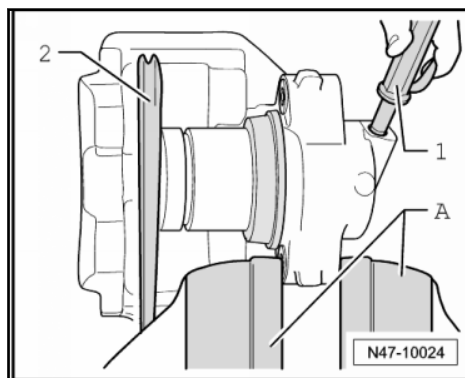
1 - Piston Resetting Tool - Cap /6 -T10146/6-

2 - Piston Resetting Tool -T10145-

Make Sure the Cap Fits Correctly



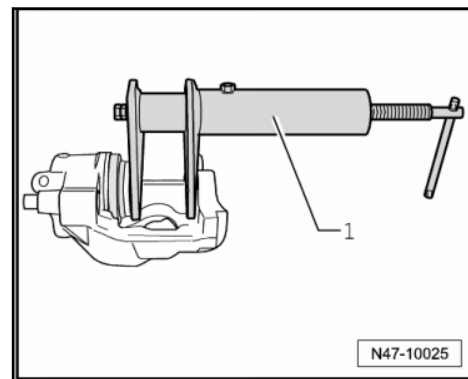
- It must not be possible to pull the cap off the brake caliper by hand.
- Gently push the piston on the cap.
- Lock the piston in this position.



2 - Trim Removal Wedge -3409-

Do Not Tilt the Piston in Order to Avoid Damaging the Sealing Boot.

- Blow compressed air on the cap (maximum 3 bar (43.5 psi))
-1-. This will force the cap onto the piston.
- Push the piston into the brake caliper.



1 - Piston Resetting Tool -T10145-

The outer sealing lip of the cap thereby slips into the groove on the piston.





2 Rear Brake Caliper

⇒ [-2.1 Rear Brake Caliper", page 294](#)

⇒ [C2.2 aliper Piston, Removing and Installing", page 298](#)

2.1 Overview - Rear Brake Caliper

⇒ [-2.1.1 Rear Brake Caliper, Rear Brakes Bosch ZOH BIR 38", page 294](#)

⇒ [-2.1.2 Rear Brake Caliper, CI 38 Rear Brakes", page 296](#)

2.1.1 Overview - Rear Brake Caliper, Rear Brakes Bosch ZOH BIR 38

- ◆ Install the entire repair kit when servicing.
- ◆ Only use mineral spirits to clean the brakes.
- ◆ New brake calipers are filled with brake fluid and are pre-bled.
- ◆ Apply a thin coat of Assembly Paste -G 052 150 A2- to brake cylinders, pistons and seals.
- ◆ If a repair is required, the brake calipers must always be pre-bled before being installed in the vehicle (without brake pads). Refer to ⇒ [C2.2.3 aliper, Pre-Bleeding", page 302](#) .



1 - Brake Caliper with Parking Brake Cable Lever

- ☐ Replace the brake caliper if there is a leak at the parking brake cable lever
- ☐ Bleed the brake caliper after servicing. Refer to [⇒ C2.2.3 aliper, Pre-Bleeding](#), page 302 .

2 - Breather Valve

- ☐ 10 Nm
- ☐ Lightly grease the threads with Assembly Paste -G 052 150 A2- before installing.

3 - Dust Cap

4 - Screw

- ☐ 35 Nm
- ☐ Self-locking
- ☐ Replace
- ☐ When loosening and tightening, counterhold at guide pin

5 - Upper Guide Pin

- ☐ Lubricate before installing the cap
- ☐ Allocation. Refer to the Parts Catalog.

6 - Cap

- ☐ Install on brake carrier and guide pin.

7 - Lower Guide Pin

- ☐ With recess
- ☐ Lubricate before installing the cap
- ☐ Allocation. Refer to the Parts Catalog.

8 - Guide Grommet

- ☐ On the lower guide pin

9 - Brake Carrier

- ☐ Supplied with sufficient grease on guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.
- ☐ Allocation. Refer to the Parts Catalog.

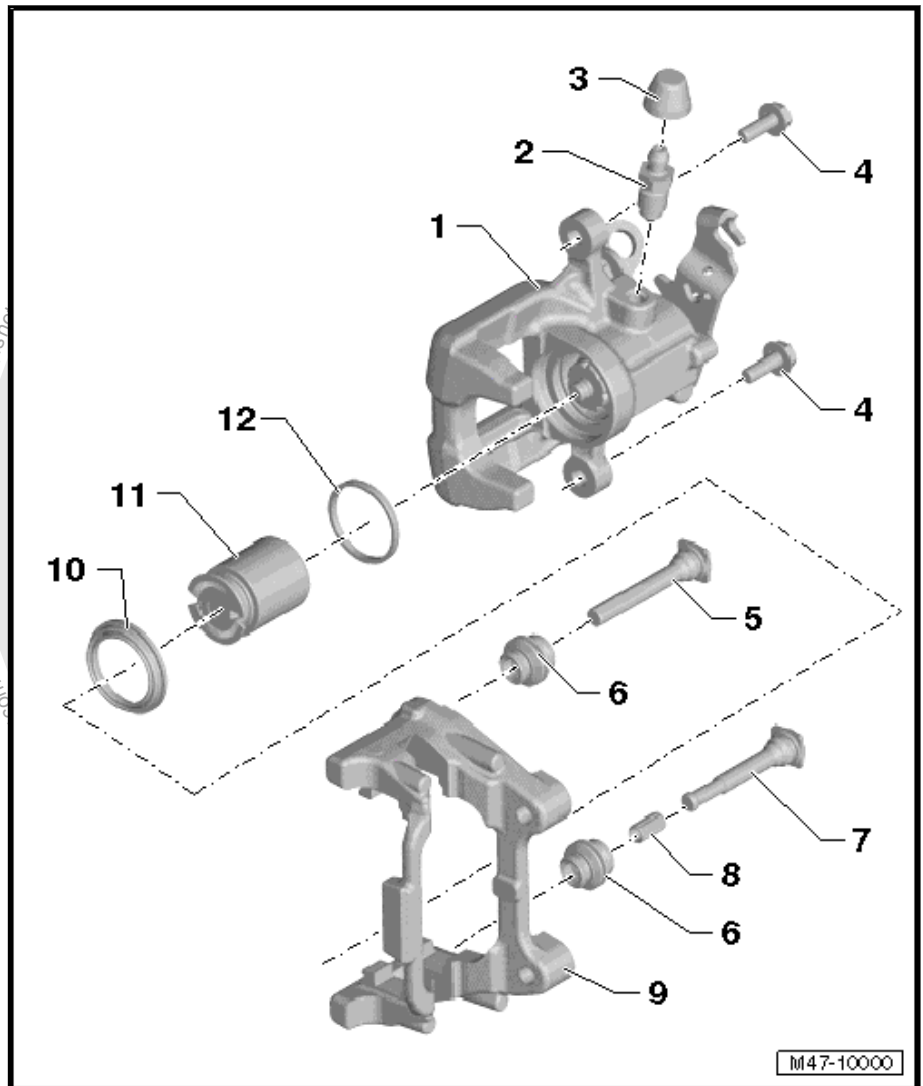
10 - Cap

- ☐ Pull onto the piston with the outer sealing lip
- ☐ Removing and installing. Refer to [⇒ C2.2.1 aliper Piston, Removing and Installing, Rear Brakes ZOH BIR 38](#), page 298 .

11 - Piston with Automatic Adjusting Tool

- ☐ Removing and installing. Refer to [⇒ C2.2.1 aliper Piston, Removing and Installing, Rear Brakes ZOH BIR 38](#), page 298 .
- ☐ Apply thin coat of Assembly Paste -G 052 150 A2- to piston before assembling.

12 - Seal





- ❑ Removing and installing. Refer to ➤ [C2.2.1 aliper Piston, Removing and Installing, Rear Brakes ZOH BIR 38", page 298](#) .

2.1.2 Overview - Rear Brake Caliper, CI 38 Rear Brakes

- ◆ Install the entire repair kit when servicing.
- ◆ Only use mineral spirits to clean the brakes.
- ◆ New brake calipers are filled with brake fluid and are pre-bled.
- ◆ Apply a thin coat of Assembly Paste -G 052 150 A2- to brake cylinders, pistons and seals.
- ◆ If a repair is required, the brake calipers must always be pre-bled before being installed in the vehicle (without brake pads). Refer to ➤ [C2.2.3 aliper, Pre-Bleeding", page 302](#) .





1 - Cap

- ☐ Pull onto the piston with the outer sealing lip
- ☐ Removing and installing. Refer to ➤ [C2.2.2 aliper Piston, Removing and Installing, CI 38 Rear Brakes", page 300](#).

2 - Piston with Automatic Adjusting Tool

- ☐ Removing and installing. Refer to ➤ [C2.2.2 aliper Piston, Removing and Installing, CI 38 Rear Brakes", page 300](#).
- ☐ Apply a thin coat of Assembly Paste -G 052 150 A2- to piston beforehand

3 - Seal

- ☐ Removing and installing. Refer to ➤ [C2.2.2 aliper Piston, Removing and Installing, CI 38 Rear Brakes", page 300](#).

4 - Brake Caliper

- ☐ Removing and installing. Refer to ➤ [C2.3 aliper, Removing and Installing", page 208](#).
- ☐ With parking brake cable lever
- ☐ Replace the brake caliper if there is a leak at the parking brake cable lever
- ☐ Pre-bleed the brake caliper after servicing. Refer to ➤ [C2.3.1 aliper, Removing and Installing, Rear Brakes Bosch ZOH BIR 38", page 208](#).

5 - Breather Valve

- ☐ 10 Nm
- ☐ Lightly grease the threads with Assembly Paste -G 052 150 A2- before installing.

6 - Dust Cap

7 - Bolt

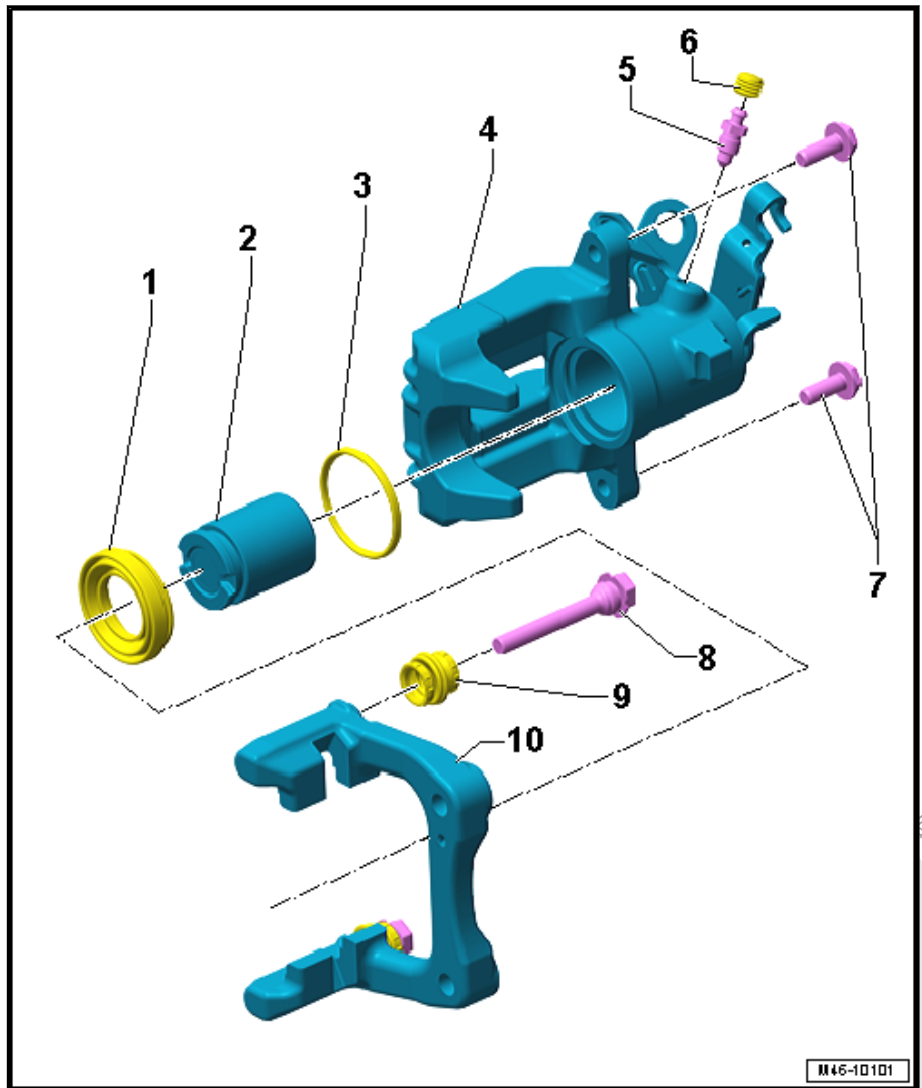
- ☐ 35 Nm
- ☐ Replace after removing
- ☐ Self-locking
- ☐ When loosening and tightening, counterhold at guide pin

8 - Guide Pin

- ☐ Lubricate before installing the cap
- ☐ Check for ease of movement

9 - Cap

- ☐ Install on brake carrier and guide pin.
- ☐ Check for damage and correct seating



M46-10101



10 - Brake Carrier

- ☐ Removing and installing. Refer to ⇒ [C2.4 arrier, Removing and Installing", page 218](#) .
- ☐ Delivered as an assembled replacement part with sufficient grease on the guide pins
- ☐ Install the repair kit if the caps or guide pins are damaged. Use the supplied grease packet to lubricate guide pins.

2.2 Brake Caliper Piston, Removing and Installing

⇒ [C2.2.1 aliper Piston, Removing and Installing, Rear Brakes ZOH BIR 38", page 298](#)

⇒ [C2.2.2 aliper Piston, Removing and Installing, CI 38 Rear Brakes", page 300](#)

⇒ [C2.2.3 aliper, Pre-Bleeding", page 302](#)

2.2.1 Brake Caliper Piston, Removing and Installing, Rear Brakes ZOH BIR 38

Special tools and workshop equipment required

- ◆ Brake Caliper Tool -T10165-
- ◆ Trim Removal Wedge -3409-

Perform the Following:

Removing

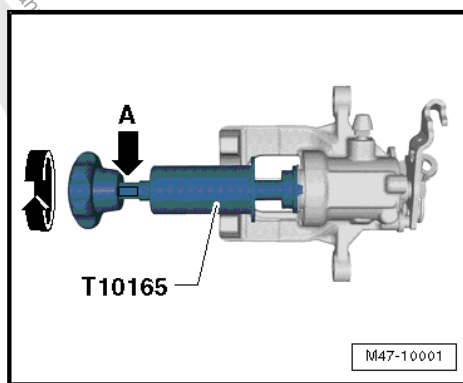


WARNING

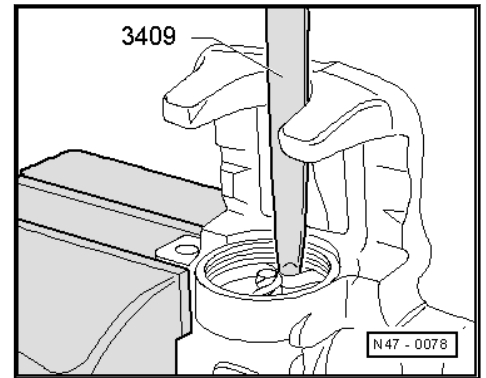
Adjusting the brake piston is only permitted using the Brake Caliper Tool -T10165-.

- Remove the piston from the brake caliper by turning the thumbwheel toward the left.

Insert the Brake Caliper Tool -T10165- so that the collar touches the piston.



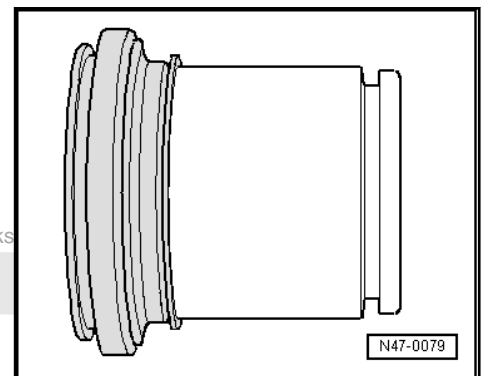
- ◆ For pistons that are difficult to move, an open end wrench (size 13 mm) can be positioned at the appropriate wrench surfaces -arrow A-.
- Remove the gasket using the Trim Removal Wedge -3409-.



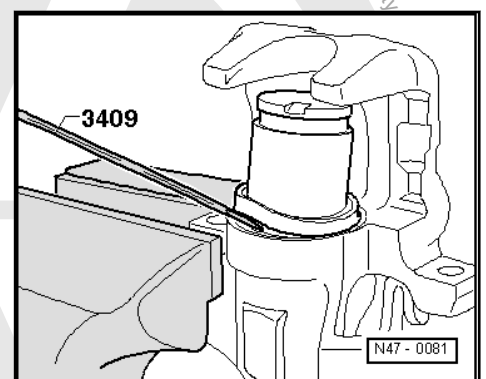
Installing

Install in reverse order of removal. Note the following:

- The surface of the piston and seal must only be cleaned with mineral spirits and then dried.
- Thinly coat the piston and the seal with Assembly Paste -G 052 150 A2- before installing.
- Place the cap with the outer sealing lip on the piston.

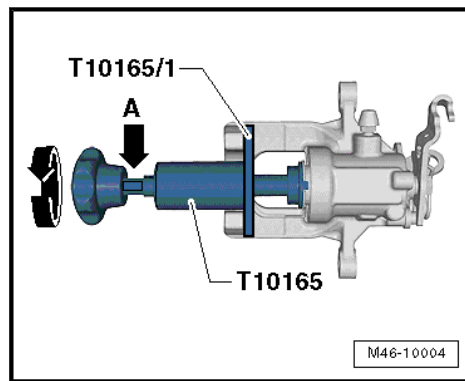


- Insert the inner sealing lip in the cylinder groove using the Trim Removal Wedge -3409-.



Hold the piston in front of the brake caliper for this procedure.

- Turn the thumbwheel on the Brake Caliper Tool -T10165- to the right to install the piston. Be careful not to damage the cap.



- Use the Resetting & Extracting Tool - Plate -T10165/1- to assist in installing.
- ◆ Insert the Brake Caliper Tool -T10165- so that the collar is resting on the Resetting & Extracting Tool - Plate -T10165/1-

2.2.2 Brake Caliper Piston, Removing and Installing, CI 38 Rear Brakes

Special tools and workshop equipment required

- ◆ Brake Caliper Tool -T10165-
- ◆ Trim Removal Wedge -3409-

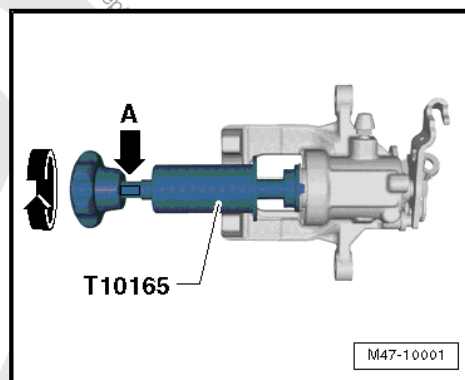
Removing



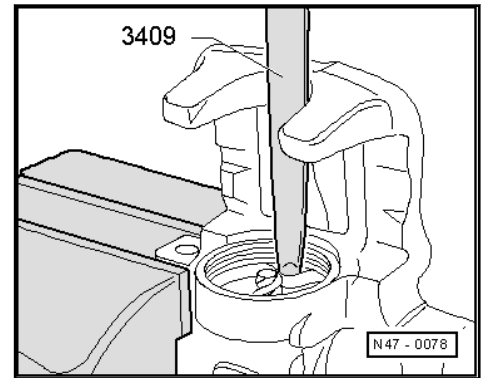
WARNING

Adjusting the brake piston is only permitted using the Brake Caliper Tool -T10165-.

- Insert the Brake Caliper Tool -T10165- so that the collar touches the piston.



- Remove the piston from the brake caliper by turning the thumbwheel toward the left.
- For pistons that are difficult to move, an open end wrench (size 13 mm) can be positioned at the appropriate wrench surfaces -arrow A-.
- Remove the seal using the Trim Removal Wedge -3409-.



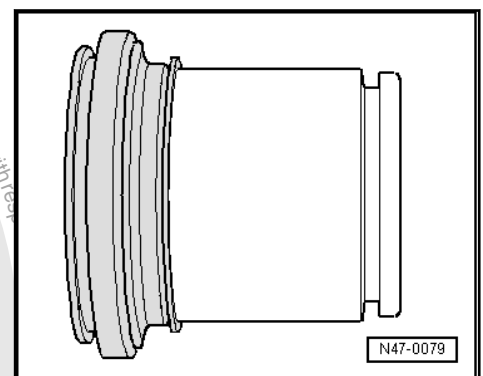
Installing

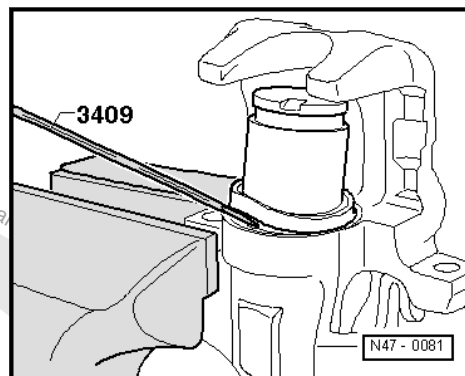
Install in reverse order of removal. Note the following:



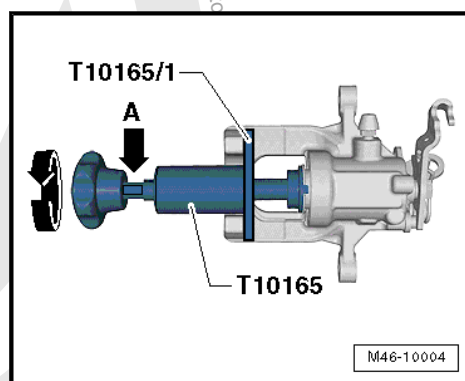
Note

- ◆ *Install the entire repair kit when servicing.*
- ◆ *Only use mineral spirits to clean the brakes.*
- ◆ *New brake calipers are filled with brake fluid and are pre-bled.*
- ◆ *Apply a thin coat of Assembly Paste -G 052 150 A2- to brake cylinders, pistons and seals.*
- ◆ *If a repair is required, the brake calipers must always be pre-bled before being installed in the vehicle (without brake pads). Refer to ➔ [C2.2.3 aliper, Pre-Bleeding](#), page 302 .*
- Only clean the surfaces on the pistons and gasket with mineral spirits and then dry.
- Place the seal in the groove.
- Thinly coat the piston and seal with Assembly Paste - G 052 150 A2- before inserting.
- Place the cap with the outer sealing lip on the piston.
- Insert the inner sealing lip in the cylinder groove using the Trim Removal Wedge -3409-.





- Hold the piston in front of the brake caliper for this procedure.
- Install the piston by turning to the right.



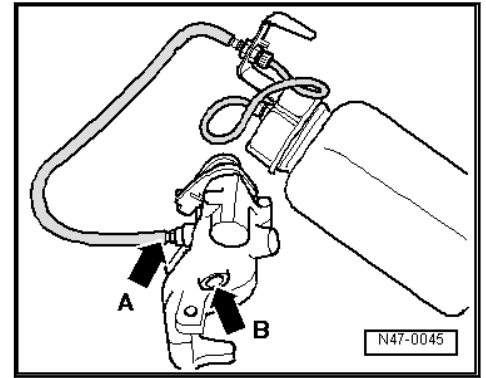
- Do not damage the cap while doing so.
- Use the Resetting & Extracting Tool - Plate - T10165/1- to assist in installing.
- Insert the Brake Caliper Tool - T10165- so that the collar is resting on the Resetting & Extracting Tool - Plate - T10165/1-
- Install by turning the thumbwheel on the Brake Caliper Tool - T10165- to the right.

The automatic adjustment in the brake caliper is destroyed when adjusting the piston using a piston resetting tool (for example, Piston Resetting Tool T10145) or the foot brake is pressed.

2.2.3 Brake Caliper, Pre-Bleeding

Perform the Following:

- Open the breather valve -arrow A- and using a commercially available bleeder bottle, fill with brake fluid until brake fluid flows out of the threaded hole (brake hose connection) -arrow B- without any bubbles. Close the breather valve.



Position the brake caliper as shown during the pre-bleed procedure.





3 Brake Booster/Brake Master Cylinder

- ⇒ [-3.1 Brake Booster/Brake Master Cylinder", page 304](#)
- ⇒ [L3.2 amp Switch, Removing and Installing", page 308](#)
- ⇒ [F3.3 fluid Reservoir, Removing and Installing", page 316](#)
- ⇒ [M3.4 aster Cylinder, Removing and Installing", page 329](#)
- ⇒ [B3.5 ooster, Removing and Installing", page 370](#)

3.1 Overview - Brake Booster/Brake Master Cylinder

- ⇒ [-3.1.1 Brake Booster/Brake Master Cylinder", page 304](#)

3.1.1 Overview - Brake Booster/Brake Master Cylinder



Note

Use only new brake fluid. Observe information on brake fluid reservoir!





1 - Pedal Assembly

- ☐ Removing and installing. Refer to ➤ [P4 pedal", page 258](#).

2 - Nut

- ☐ 25 Nm
- ☐ Always replace if removed
- ☐ Note the tightening sequence. Refer to ➤ [page 388](#).

3 - Seal

- ☐ For the brake booster
- ☐ Bonded, only at the factory
- ☐ The bonding on the brake booster and bulkhead must not be replaced

4 - Brake Booster

- ☐ On gasoline engines, the required vacuum is supplied either by the intake manifold or by a vacuum pump.
- ☐ Function Test:
 - With the engine switched off, depress the brake pedal firmly several times (to reduce the vacuum in the device).
 - Hold the brake pedal with average foot pressure and start the engine. If the brake booster is working properly, the brake pedal will be felt to give noticeably under foot (booster becomes effective).
- ☐ Replace as a unit in the event of malfunction (previously, check all vacuum lines).
- ☐ Removing and installing. Refer to ➤ [B3.5 ooster, Removing and Installing", page 370](#).
- ☐ Refer to the Parts Catalog for the allocation.
- ☐ Check the brake booster vacuum system for faults. Refer to ➤ [S4.2 ystem, Checking", page 437](#)

5 - Seal

6 - Brake Master Cylinder

- ☐ Refer to the Parts Catalog for the allocation.
- ☐ Cannot be serviced. Replace as a complete unit if malfunctioning.
- ☐ Removing and installing. Refer to ➤ [M3.4 aster Cylinder, Removing and Installing", page 329](#).

7 - Nut

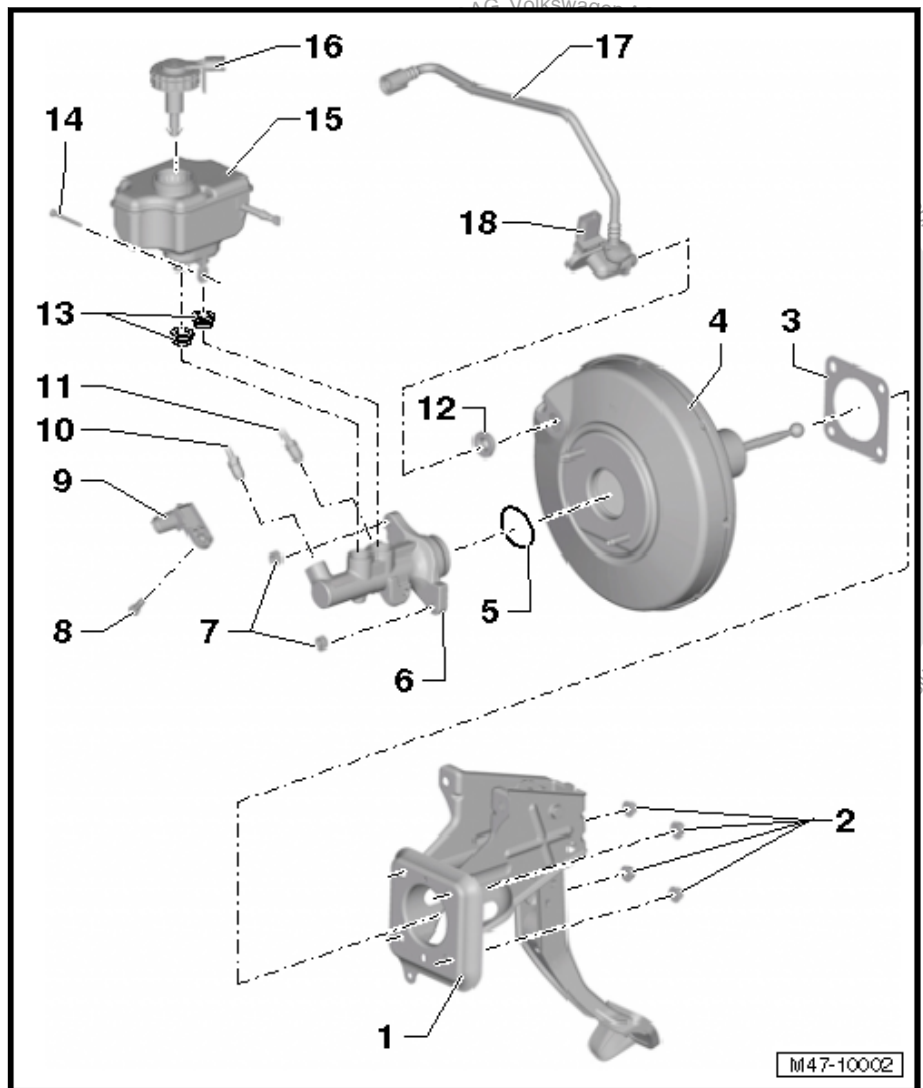
- ☐ 25 Nm
- ☐ Always replace if removed

8 - Screw

- ☐ 5 Nm

9 - Brake Lamp Switch -F-

- ☐ Including the Brake Pedal Switch -F47-





- ❑ Removing and installing. Refer to [⇒ L3.2 amp Switch, Removing and Installing", page 308](#) .

10 - Brake Line

- ❑ 14 Nm
- ❑ Brake master cylinder/secondary piston circuit to the ABS Hydraulic Unit -N55-
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

11 - Brake Line

- ❑ 14 Nm
- ❑ Brake master cylinder/primary piston circuit to the ABS Hydraulic Unit -N55-
- ❑ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

12 - Sealing Plugs

- ❑ Connection for vacuum hose

13 - Sealing Plugs

- ❑ Coat with brake fluid and press into brake fluid reservoir

14 - Mounting Pin

- ❑ Push to right to remove the brake fluid reservoir

15 - Brake Fluid Reservoir

- ❑ Brake Fluid. Refer to [⇒ S6 ystem", page 457](#) .
- ❑ Removing and installing. Refer to [⇒ F3.3 uid Reservoir, Removing and Installing", page 316](#) .

16 - Cap

- ❑ With Brake Fluid Level Warning Switch -F34-

17 - Vacuum Line

- ❑ Insert in the brake booster
- ❑ Refer to the Parts Catalog for the allocation.
- ❑ Check if brake booster is malfunctioning. Refer to [⇒ S4.2 ystem, Checking", page 437](#) .

18 - Vacuum Sensor -G608-

- ❑ Vacuum Sensor -G608- for vehicles with HBB (hydraulic brake booster)
- ❑ Vacuum Sensor -G608-, removing and installing. Refer to [⇒ B4.7 ooster Pressure Sensor, Removing and Installing", page 450](#) .
- ❑ Refer to the Parts Catalog for the allocation.

3.1.2 Overview - Brake Booster/Brake Master Cylinder, RHD

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Note

Use only new brake fluid. Observe information on brake fluid reservoir!



1 - Cap

- ☐ With Brake Fluid Level Warning Switch -F34-

2 - Brake Fluid Reservoir

3 - Sealing Plugs

- ☐ Coat with brake fluid and press into brake fluid reservoir
- ☐ Check for proper seating

4 - Brake Line

- ☐ 14 Nm
- ☐ Brake master cylinder/primary piston circuit to the ABS Hydraulic Unit -N55-
- ☐ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

5 - Vacuum Line

- ☐ Insert in the brake booster
- ☐ Refer to the Parts Catalog for the allocation.
- ☐ Check if brake booster is malfunctioning. Refer to ⇒ [S4.2 system, Checking", page 437](#).

6 - Plugs

- ☐ Check for proper seating
- ☐ Vacuum line connection

7 - Brake Booster

- ☐ On gasoline engines, the required vacuum is supplied either by the intake manifold or by a vacuum pump.
- ☐ Function Test:
 - With the engine switched off, depress the brake pedal firmly several times (to reduce the vacuum in the device).
 - Hold the brake pedal with average foot pressure and start the engine. If the brake booster is working properly, the brake pedal will be felt to give noticeably under foot (booster becomes effective).
- ☐ Replace as a unit in the event of malfunction (previously, check all vacuum lines).
- ☐ Refer to the Parts Catalog for the allocation.
- ☐ Check the brake booster vacuum system for faults. Refer to ⇒ [S4.2 system, Checking", page 437](#)

8 - Seal

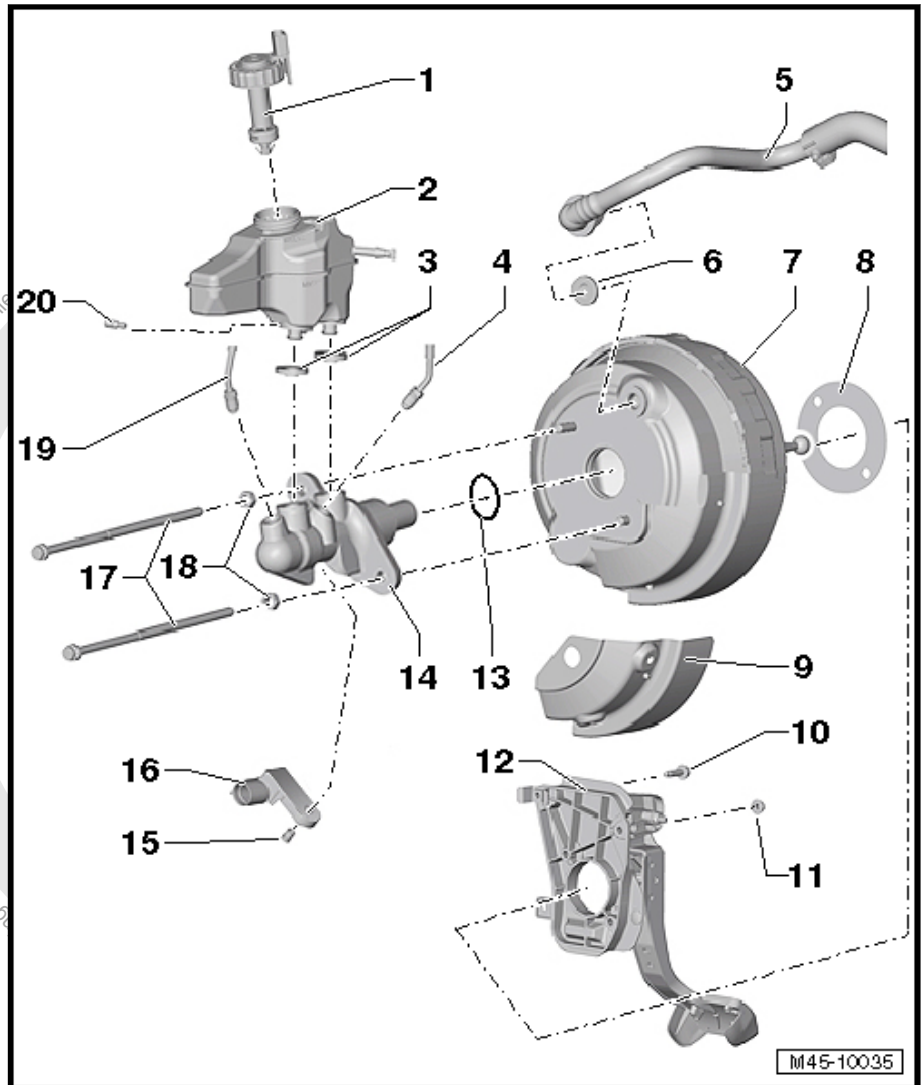
- ☐ For the brake booster
- ☐ Bonded, only at the factory
- ☐ The bonding on the brake booster and bulkhead must not be replaced

9 - Heat Shield

- ☐ If equipped

10 - Screw

- ☐ 25 Nm





11 - Nut

- ☐ 25 Nm
- ☐ Always replace if removed

12 - Pedal Assembly

13 - Seal

14 - Brake Master Cylinder

- ☐ Removing and installing. Refer to [⇒ M3.4 aster Cylinder, Removing and Installing", page 329](#) .
- ☐ Refer to the Parts Catalog for the allocation.
- ☐ Cannot be serviced. Replace as a complete unit if malfunctioning.

15 - Screw

- ☐ 5 Nm

16 - Brake Lamp Switch -F-

- ☐ Including the Brake Pedal Switch -F47-

17 - Screw

- ☐ 25 Nm

18 - Nut

- ☐ Always replace if removed
- ☐ 50 Nm

19 - Brake Line

- ☐ 14 Nm
- ☐ Brake master cylinder/secondary piston circuit to the ABS Hydraulic Unit -N55-
- ☐ Identification: 6.5 mm diameter and tube fitting with a M12 x 1 thread

20 - Screw

- ☐ 4 Nm

3.2 Brake Lamp Switch, Removing and Installing

[⇒ B3.2.1 Brake Lamp Switch F, Removing and Installing, with 5-Cylinder Gasoline Engine", page 308](#)

[⇒ B3.2.2 Brake Lamp Switch F, Removing and Installing, with 4-Cylinder Gasoline Engine", page 310](#)

[⇒ B3.2.3 Brake Lamp Switch F, Removing and Installing, with 4-Cylinder Diesel Engine", page 312](#)

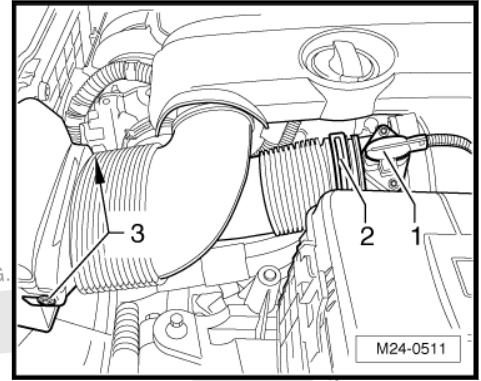
[⇒ B3.2.5 Brake Lamp Switch F, Removing and Installing, Hybrid", page 315](#)

3.2.1 Brake Lamp Switch -F-, Removing and Installing, with 5-Cylinder Gasoline Engine

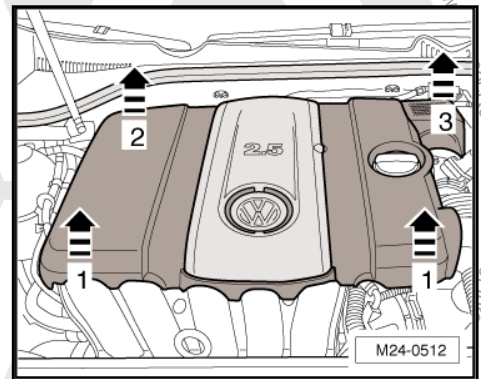
Perform the Following:

Removing

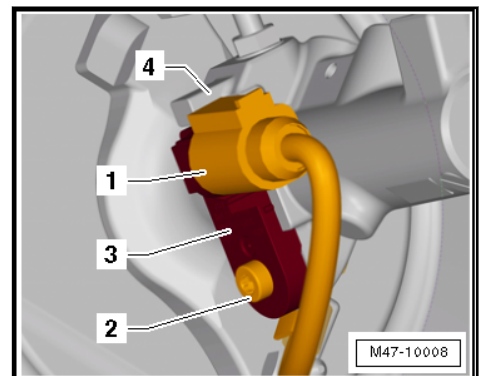
- Open clamp -2- and disconnect intake hose.
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.



- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



- Carefully swivel engine cover out of rear area.
- Remove the noise insulation or impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Release and disconnect the connector -1-.
- Remove the screw -2- from the brake master cylinder.
- Remove the Brake Lamp Switch -F- -3- from under the brake master cylinder and up from the clip -4-.



Installing

Install in reverse order of removal. Note the following:

- Insert the Brake Lamp Switch -F- into the clip.

Tightening Specifications

- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)



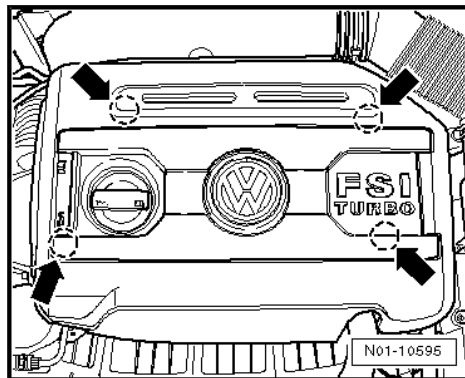
- ♦ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.

3.2.2 Brake Lamp Switch -F-, Removing and Installing, with 4-Cylinder Gasoline Engine

Perform the Following:

Removing

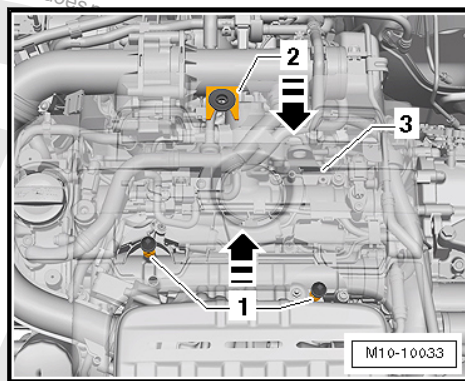
Vehicles with 2.0 L Gasoline Engine and Turbocharger:



- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

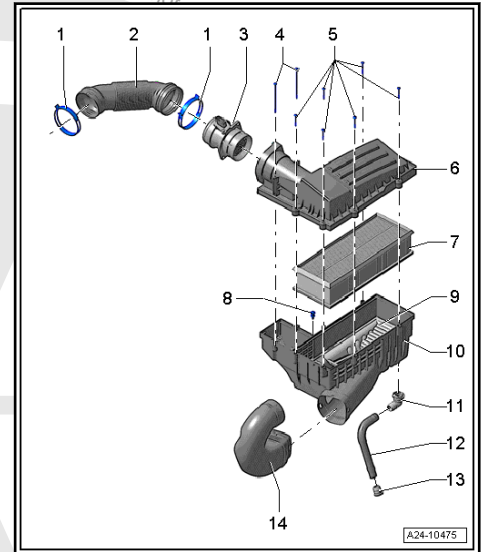
Vehicles with 1.4L Gasoline Engine, Turbocharger and Compressor:

- Lift engine cover -3- upward at points -1- in direction of -arrow-.
- Pull cover out of bracket -2- in direction of -arrow-.



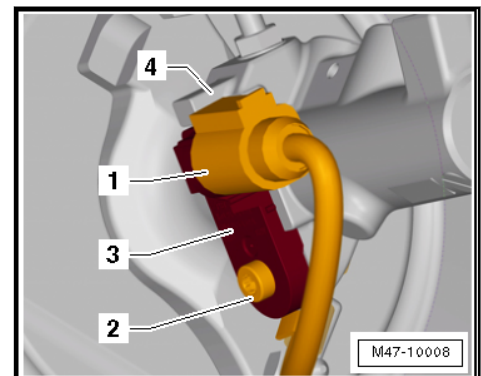
Continuation for Both Engines

- Remove the intake hose -2-. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.



Continuation for All Vehicles

- Remove the noise insulation or impact guard. Refer to
⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Release and disconnect the connector -1-.
- Remove the screw -2- from the brake master cylinder.
- Remove the Brake Lamp Switch -F- -3- from under the brake master cylinder and up from the clip -4-.



Installing

Install in reverse order of removal. Note the following:

- Insert the Brake Lamp Switch -F- into the clip.

Tightening Specifications

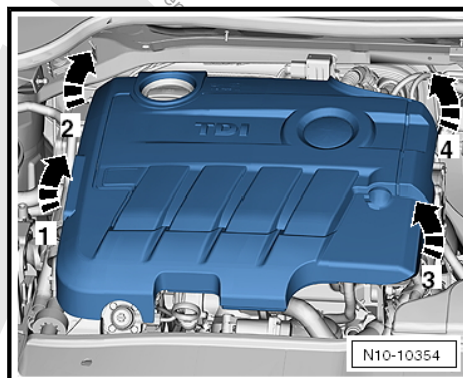
- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder](#), page 304
- ◆ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.



3.2.3 Brake Lamp Switch -F-, Removing and Installing, with 4-Cylinder Diesel Engine

Perform the Following:

Removing



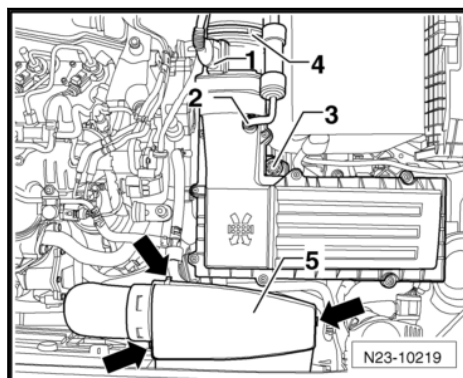
- Remove engine cover in direction of -arrows-.
- Observe the given sequence in direction of -arrows 1 through 4-.
- Reach under the engine cover as far as possible.



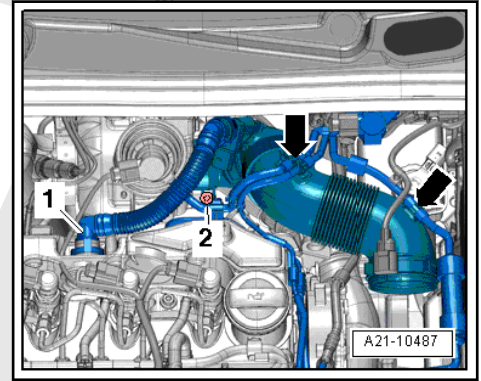
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always follow these steps to remove the engine cover.

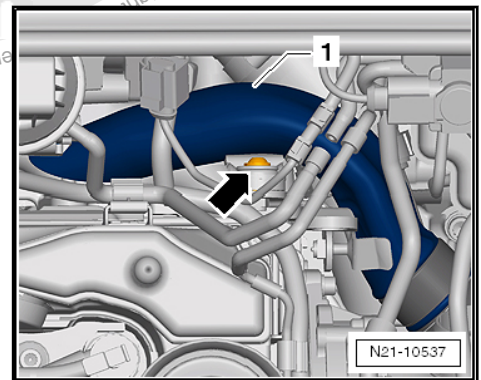
- Loosen the hose clamp -4-.



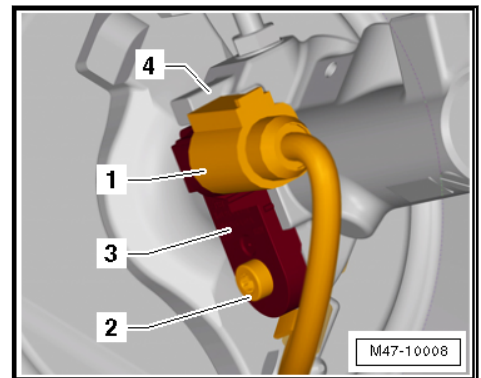
- Press the release buttons and remove the crankshaft housing ventilation hose -1- from the cylinder head cover.



- Disconnect the connector from the crankcase ventilation hose -1-.
- Free up the vacuum hoses -arrows-.
- Remove the bolt -2-.
- Turn the air guide pipe to the rear and remove it.
- If equipped, remove bolt -arrow-.
- Unclip and remove the prewarming pipe -1- from the bracket.



- Release and disconnect the connector -1-.
- Remove the screw -2- from the brake master cylinder.
- Remove the Brake Lamp Switch -F- -3- from under the brake master cylinder and up from the clip -4-.



Installing

Install in reverse order of removal. Note the following:

- Insert the Brake Lamp Switch -F- into the clip.



Tightening Specifications

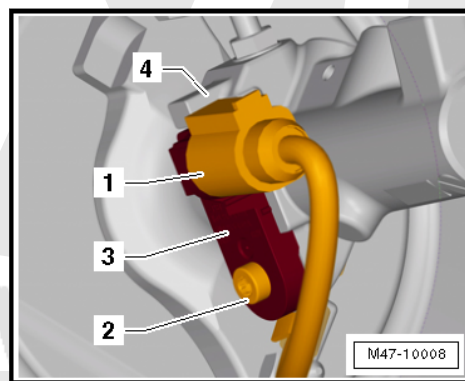
- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder](#)", page 304
- ◆ Refer to ➤ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.

3.2.4 Brake Lamp Switch -F-, Removing and Installing, RHD Vehicle

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Removing

- Release and disconnect the connector -1-.



- Remove the screw -2- from the brake master cylinder.
- Remove the Brake Lamp Switch -3- from under the brake master cylinder and up from the clip -4-.

Installing:

Install in reverse order of removal. Note the following:

- Insert the Brake Lamp Switch into the clip.

Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder](#)", page 304

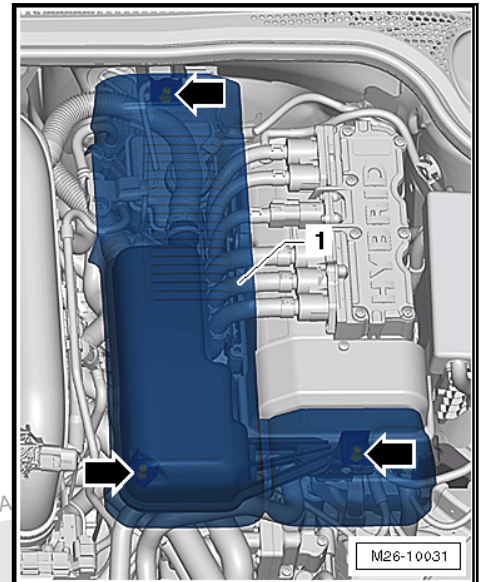


3.2.5 Brake Lamp Switch -F-, Removing and Installing, Hybrid

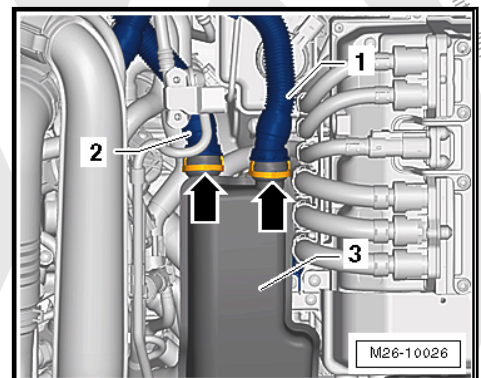
Perform the Following:

Removing

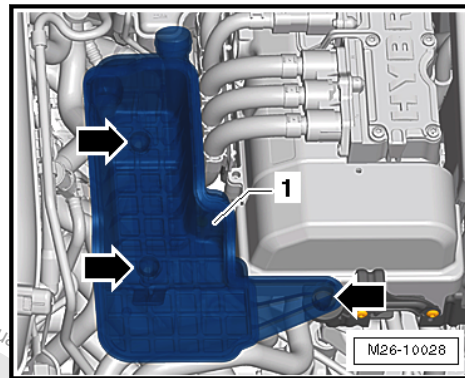
Vehicles with Engine Code CNLA



- Remove the air damper cover -1- from the retainers -arrows-.
- Disconnect the air line -1 and 2- from the air damper -3-.

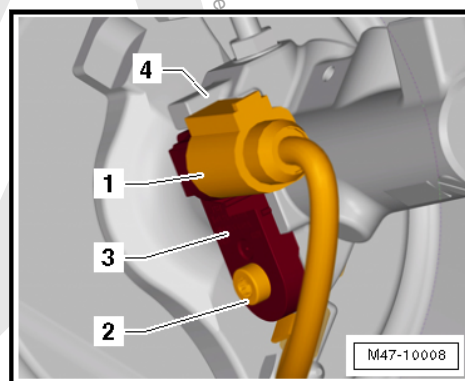


- Press the locking rings -arrows- together on both sides and disconnect the lines.
- Remove the air damper -1- from the rubber bushings -arrows-.



Continuation for All Vehicles

- Release and disconnect the connector -1-.
- Remove the screw -2- from the brake master cylinder.
- Remove the Brake Lamp Switch -F- -3- from under the brake master cylinder and up from the clip -4-.



Installing

Install in reverse order of removal. Note the following:

- Insert the Brake Lamp Switch -F- into the clip -4-.

Tightening Specifications

- ◆ Refer to ⇒ [3.1 Brake Booster/Brake Master Cylinder](#), page 304
- ◆ Refer to ⇒ Rep. Gr. 26; Secondary Air System; Overview - Secondary Air Injection System.

3.3 Brake Fluid Reservoir, Removing and Installing

⇒ [F3.3.1 Fluid Reservoir, Removing and Installing](#), page 316

⇒ [F3.3.3 Fluid Reservoir, Removing and Installing, Hybrid](#), page 325

3.3.1 Brake Fluid Reservoir, Removing and Installing

Special tools and workshop equipment required

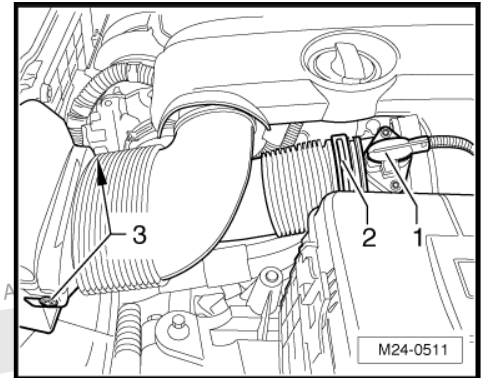
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Engine Bung Set -VAS6122-



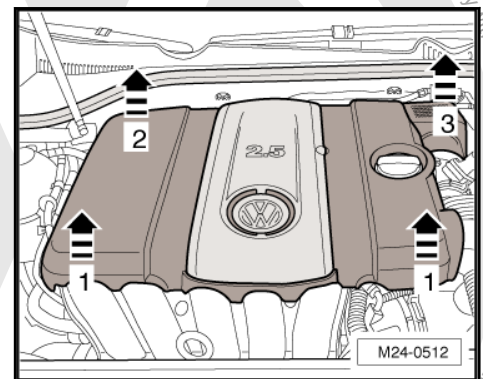
Removing

Vehicles with 5-Cylinder Gasoline Engine

- Open clamp -2- and disconnect intake hose.
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.



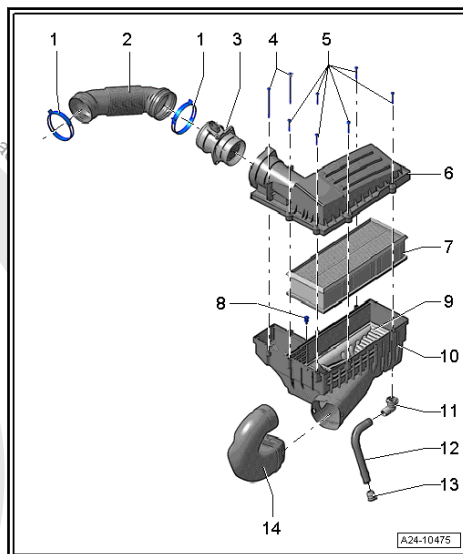
- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



- Carefully swivel engine cover out of rear area.

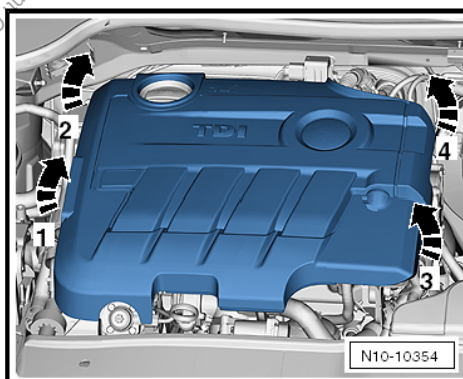
Vehicles with 4-Cylinder Gasoline Engine

- Remove the engine cover. Refer to ➔ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- If necessary, remove the intake hose -2-. Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.

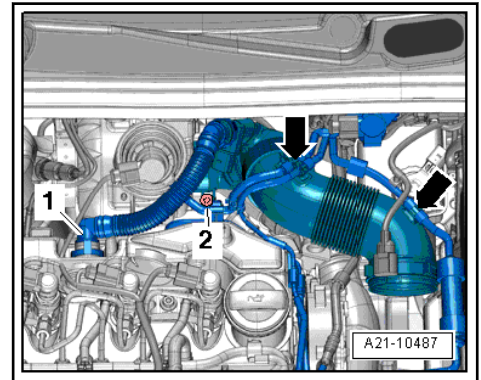


Vehicles with 4-Cylinder Diesel Engine

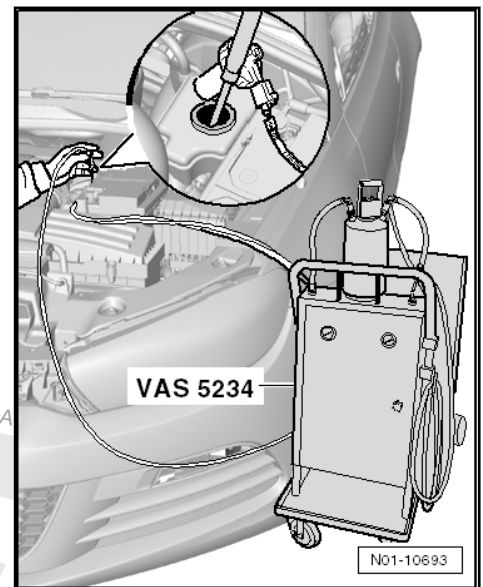
- Remove engine cover in direction of -arrows-.
- Observe the given sequence in direction of -arrows 1 through 4-.
- Reach as far as possible under the engine cover.



- Press the release buttons and remove the crankshaft housing ventilation hose -1- from the cylinder head cover.
- Disconnect the connector from the crankcase ventilation hose -1-.
- Free up the vacuum hoses -arrows-.
- Remove the bolt -2-.
- Turn the air guide pipe to the rear and remove it.
- Seal the openings with the Engine Bung Set -VAS6122-.



Continuation for All Vehicles



- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.

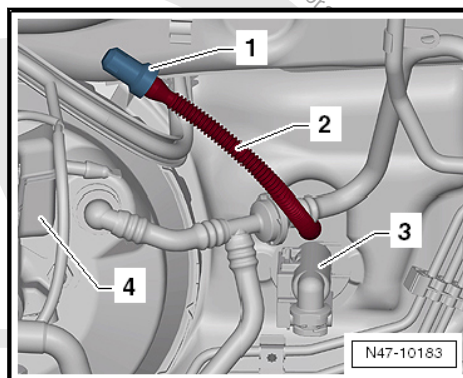


WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

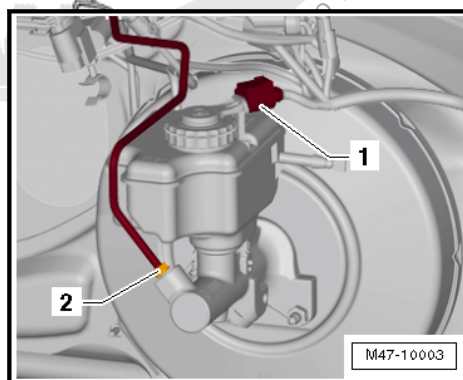


Vehicles with Manual Transmission

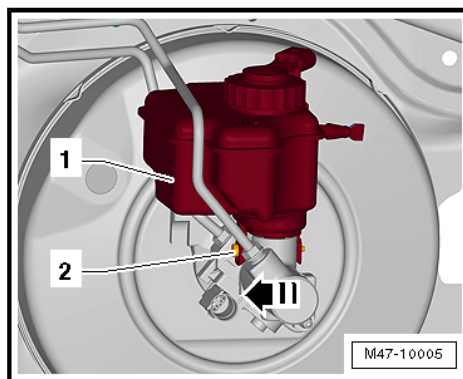


- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.

Continuation for All Vehicles



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.
- Carefully remove the brake fluid reservoir -1- from the plugs.



Installing

Install in reverse order of removal. Note the following:



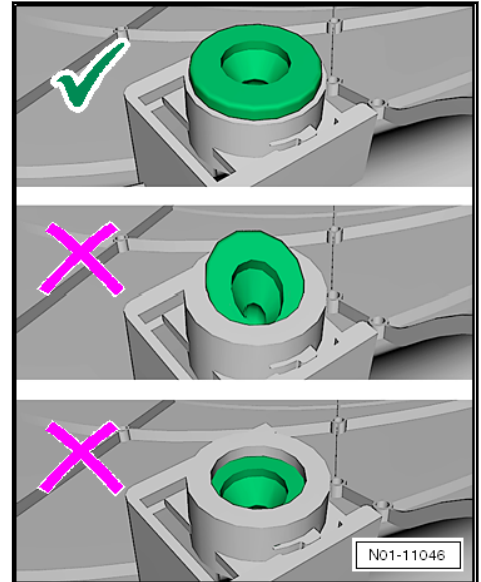
Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Bleed the brake system. Refer to ➤ [S6 ystem", page 457](#) .

Vehicles with Manual Transmission

- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles



- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



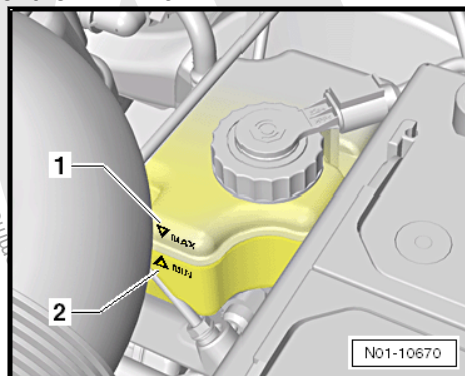
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.

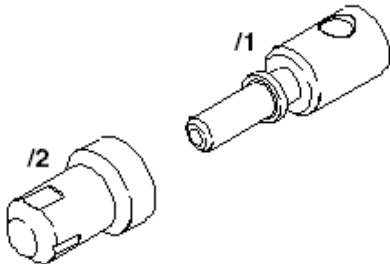

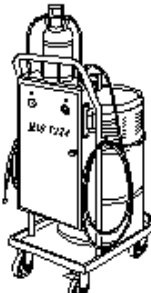




3.3.2 Brake Fluid Reservoir, Removing and Installing, RHD

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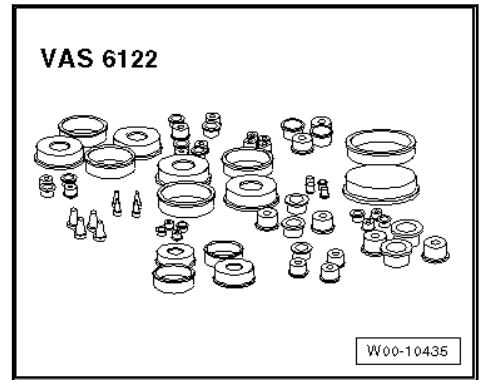
Special tools and workshop equipment required

T10249  The image shows two parts of the sealing tool T10249. Part 1 is a long, cylindrical tool with a hexagonal base and a threaded end. Part 2 is a shorter, wider cylindrical component with a hexagonal base.	V.A.G 1331  The image shows a torque wrench V.A.G 1331, which is a long, slender tool with a hexagonal base and a threaded end.
VAS 5234  The image shows a brake charger/bleeder unit VAS 5234, which is a rectangular unit on a four-wheeled cart with a handle and various hoses and connections.	
	W47-10006

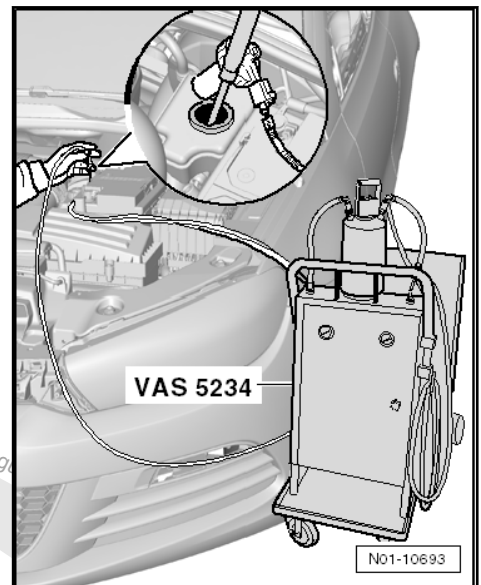
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-



◆ Engine Bung Set -VAS6122-



Removing



- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.

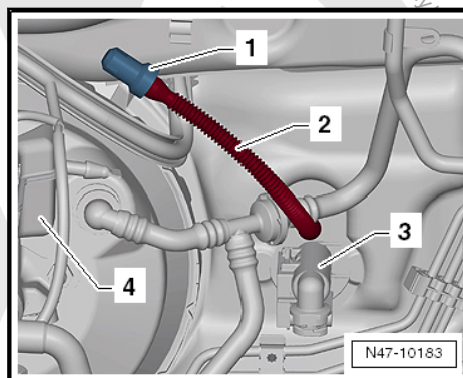


WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

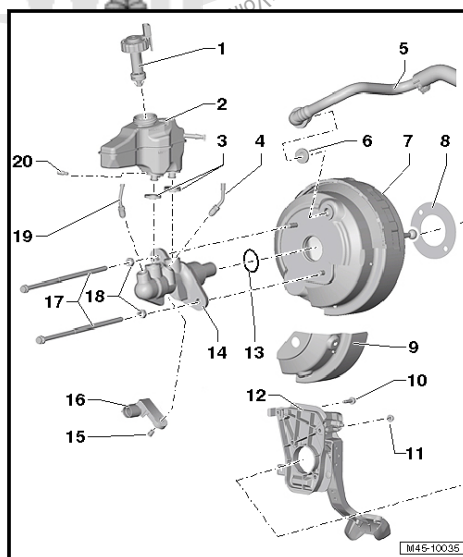


Vehicles with Manual Transmission:



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.

Continuation for All Vehicles:



- Remove master brake cylinder -14-. Refer to ⇒ [B3.4.5 Brake Cylinder, Removing and Installing, RHD with 4-Cylinder Gasoline Engine](#), page 352 .
- Remove the bolt -20-.
- Carefully remove the brake fluid reservoir -2- from the plug.

Installing

Install in reverse order of removal. Note the following:

Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

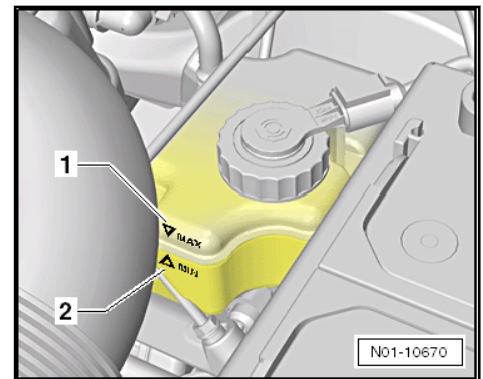
- Bleed the brake system. Refer to ⇒ [S6 System](#), page 457 .

Vehicles with Manual Transmission:

- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.



Continuation for All Vehicles:



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.

Tightening Specifications

- ◆ Refer to ➔ [-3.1 Brake Booster/Brake Master Cylinder-, page 304](#)

3.3.3 Brake Fluid Reservoir, Removing and Installing, Hybrid

Special tools and workshop equipment required

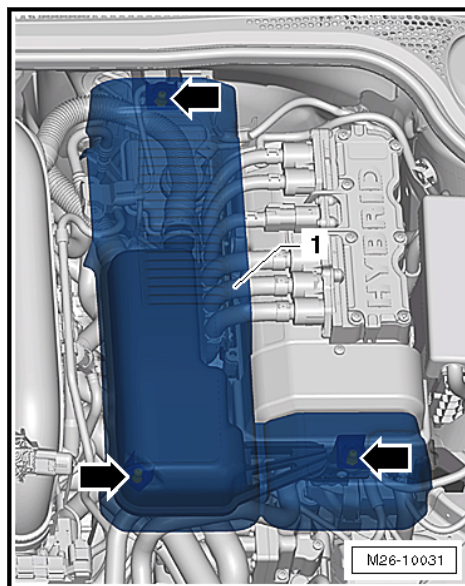
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Engine Bung Set -VAS6122-

Perform the Following:

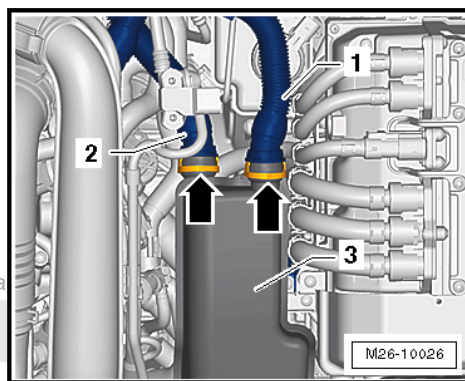
Removing

Vehicles with Engine Code CNLA

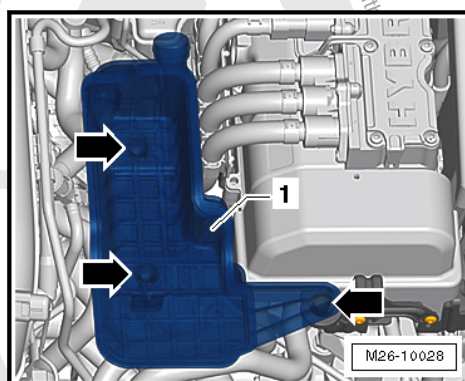
- Remove the air damper cover -1- from the retainers -arrows-.



- Disconnect the air line -1 and 2- from the air damper -3-.

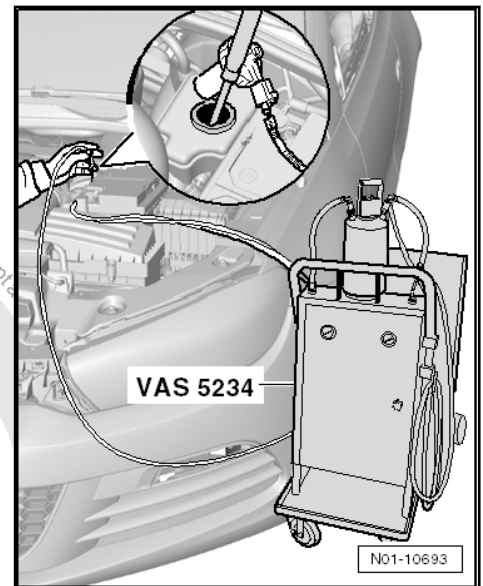


- Press the locking rings -arrows- together on both sides and disconnect the lines.
- Remove the air damper -1- from the rubber bushings -arrows-.





Continuation for All Vehicles



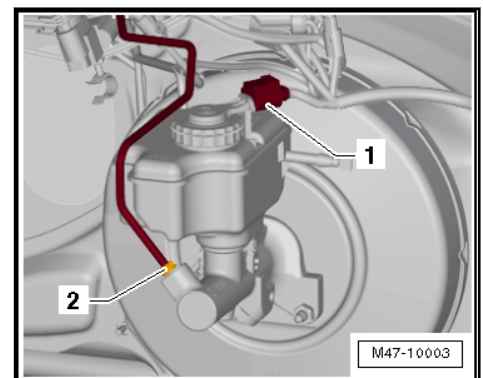
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



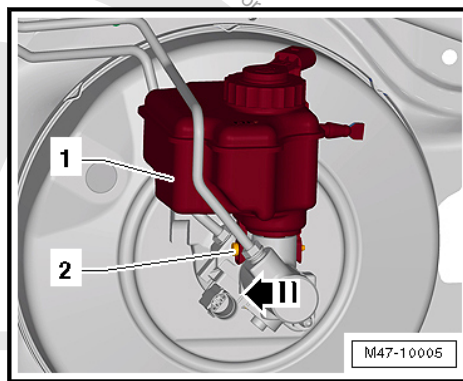
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.
- Carefully remove the brake fluid reservoir -1- from the plugs.



Installing

Install in reverse order of removal. Note the following:

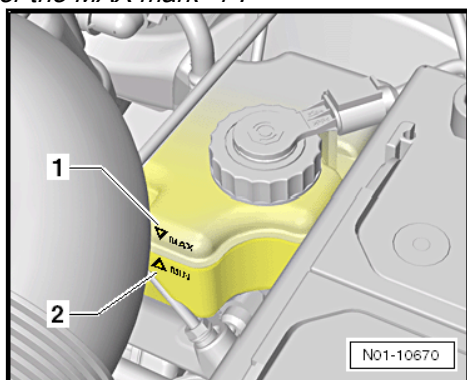
Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Make sure the sealing plugs -item 13- ➔ [Item 13 \(page 306\)](#) are seated correctly in the brake master cylinder.
- Bleed the brake system. Refer to ➔ [S6 ystem", page 457](#) .



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➔ [-3.1 Brake Booster/Brake Master Cylinder", page 304](#)
- ◆ Refer to ➔ Rep. Gr. 26; Secondary Air System; Overview - Secondary Air Injection System.



3.4 Brake Master Cylinder, Removing and Installing

⇒ B3.4.1 Brake Cylinder, Removing and Installing, with 5-Cylinder Gasoline Engine”, page 329

⇒ B3.4.2 Brake Cylinder, Removing and Installing with 4-Cylinder Gasoline Engine”, page 334

⇒ B3.4.3 Brake Cylinder, Removing and Installing, with 4-Cylinder Diesel Engine”, page 342

⇒ M3.4.4 Master Cylinder, Removing and Installing, Hybrid”, page 347

3.4.1 Master Brake Cylinder, Removing and Installing, with 5-Cylinder Gasoline Engine

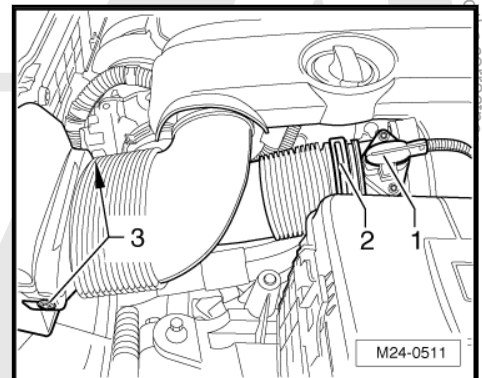
Special tools and workshop equipment required

- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-

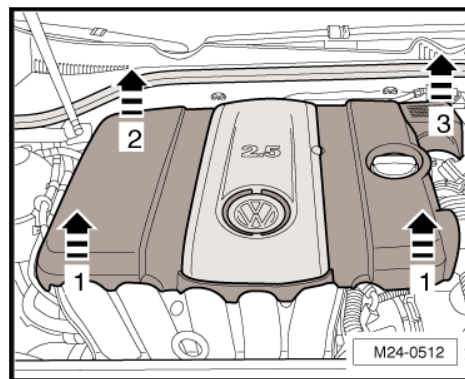
Perform the Following:

Removing

- Open clamp -2- and disconnect intake hose.
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.



- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



- Carefully swivel engine cover out of rear area.



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.

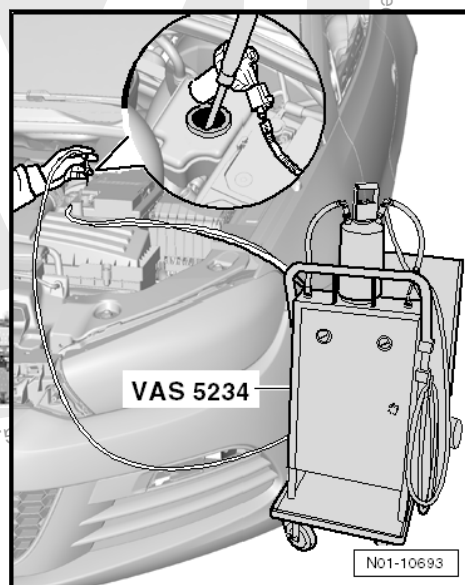


Caution

Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.

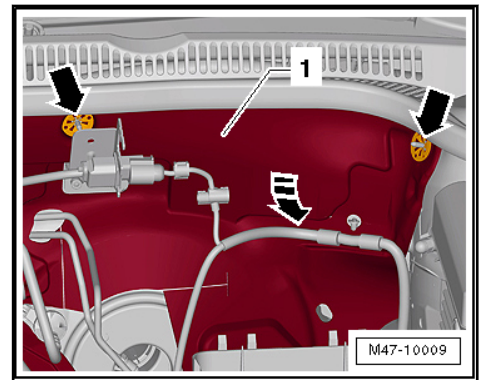




WARNING

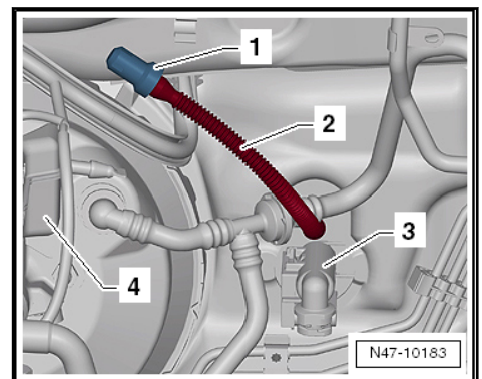
- ◆ *Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.*
- ◆ *Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*
- ◆ *Extracted brake fluid cannot be used again.*
- ◆ *Follow all disposal regulations.*

- Remove the star-shaped washers -arrows-.
- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



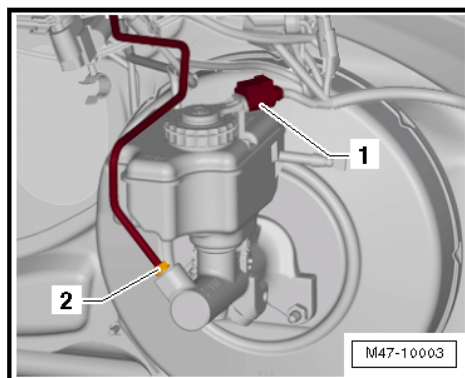
Vehicles with Manual Transmission

- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.





Continuation for All Vehicles



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



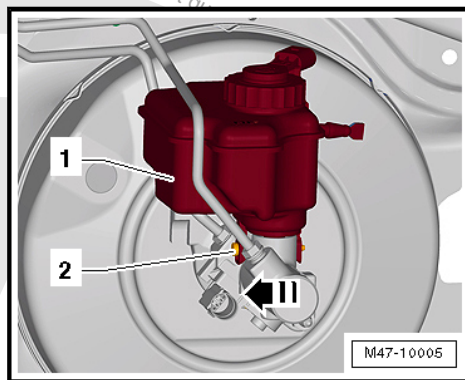
Caution

Brake lines must not be bent.

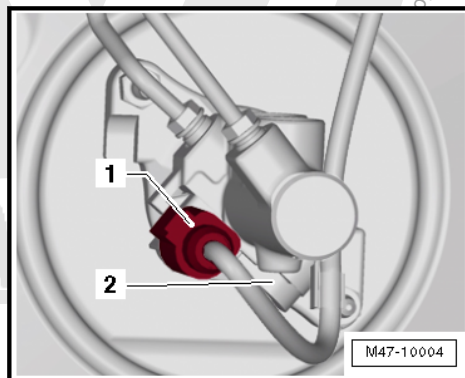
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.

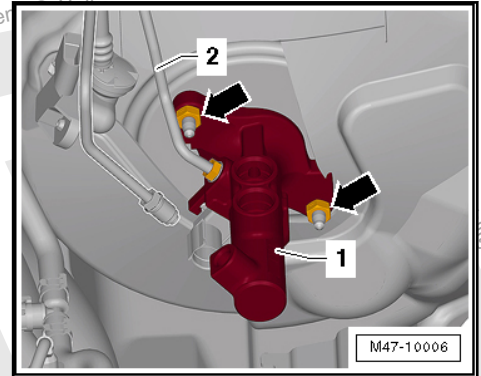


- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.





- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.
- Seal the brake lines with the Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.



- Carefully take brake master cylinder out of brake booster.

Installing

Install in reverse order of removal. Note the following:

- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.

Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

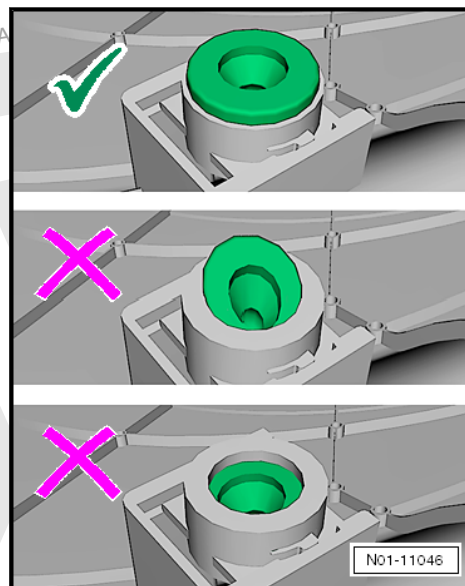
- Bleed the brake system. Refer to ⇒ [S6 system](#), page 457 .

Vehicles with Manual Transmission

- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles

- Install and connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



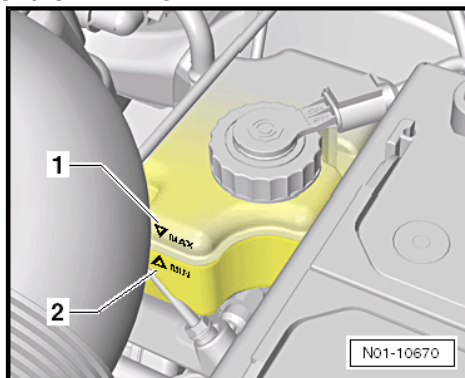
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder](#)", page 304
- ◆ Refer to ➤ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.

3.4.2 Master Brake Cylinder, Removing and Installing with 4-Cylinder Gasoline Engine

Special tools and workshop equipment required

- ◆ Release Tool - Brake Servo -T10159A-



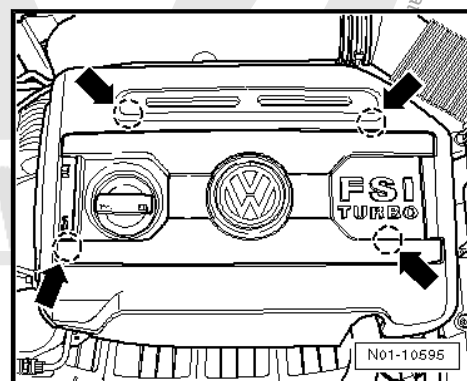
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-

Perform the Following:

Removing

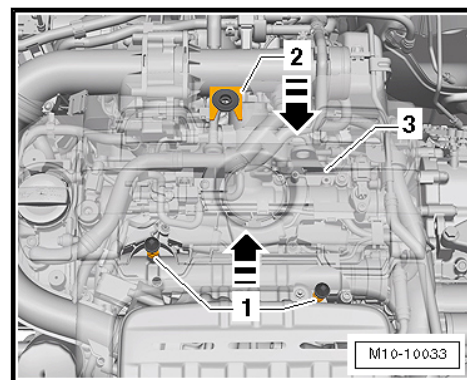
Vehicles with 2.0 L Gasoline Engine and Turbocharger

- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.



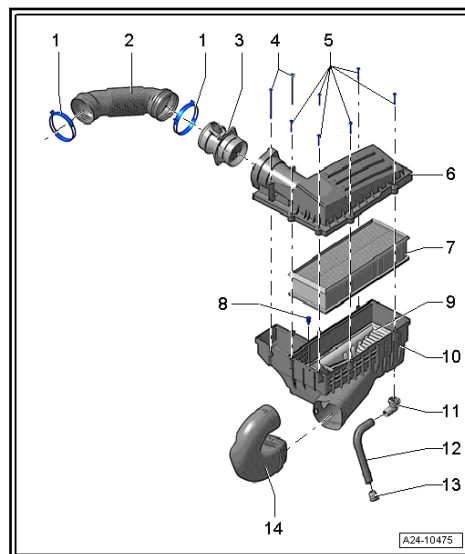
Vehicles with 1.4L Gasoline Engine, Turbocharger and Compressor:

- Lift engine cover -3- upward at points -1- in direction of -arrow-.
- Pull cover out of bracket -2- in direction of -arrow-.





Continuation for Both Engines



- Remove the intake hose -2-. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.

Continuation for All Vehicles



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.

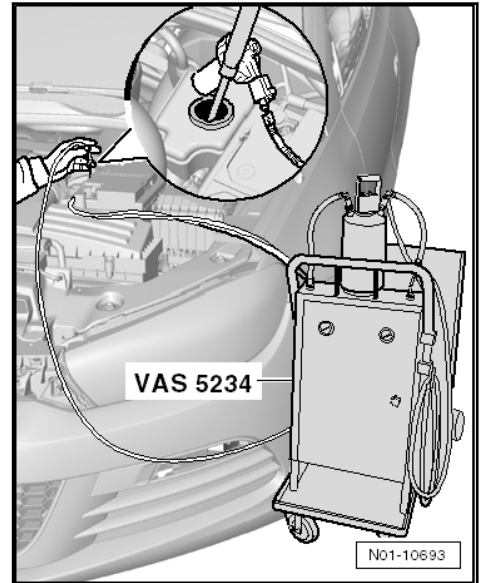


Caution

Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



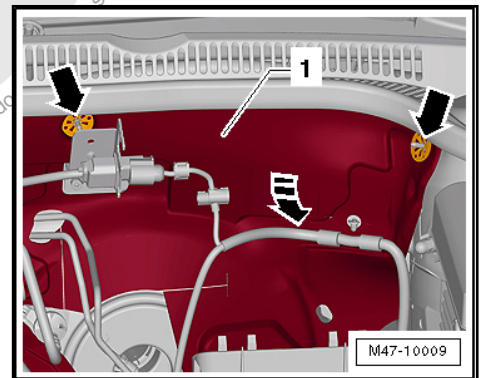
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

Vehicles with DSG® Transmission

- Remove the selector lever cable from the ball head and out of the cable bracket. Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Remove the selector lever from the selector shaft on the transmission. Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.

Continuation for All Vehicles



- Remove the star-shaped washers -arrows-.
- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.



- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



Note

It is not necessary to remove the insulation.

Vehicles with Manual Transmission

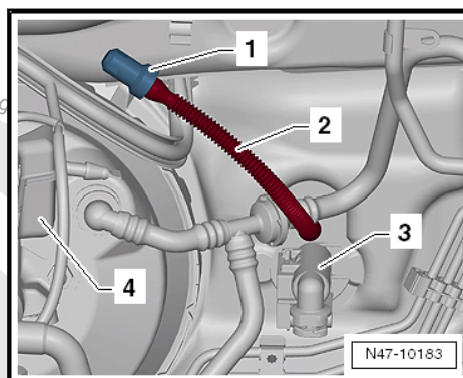
- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.



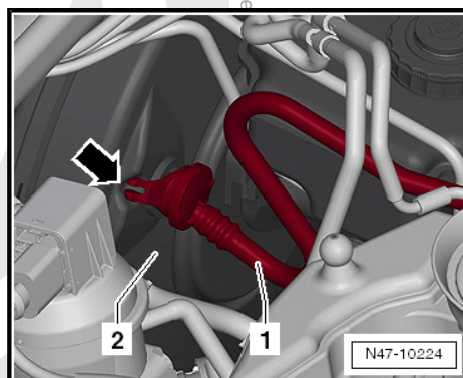
Note

It is necessary to separate the cable retainer from the selector cable prior to removing to prevent damaging the selector cable.

- Remove the selector mechanism from the transmission. Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.



Continuation for All Vehicles



- Pull the vacuum line -1- out of the brake booster -2-.
- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



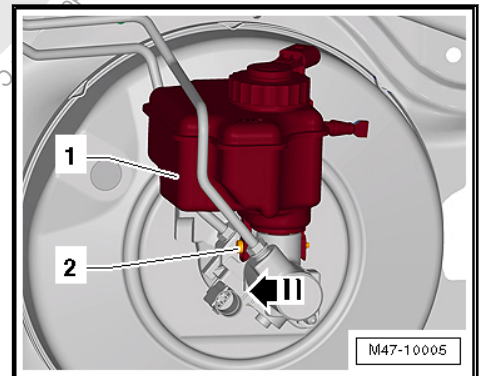
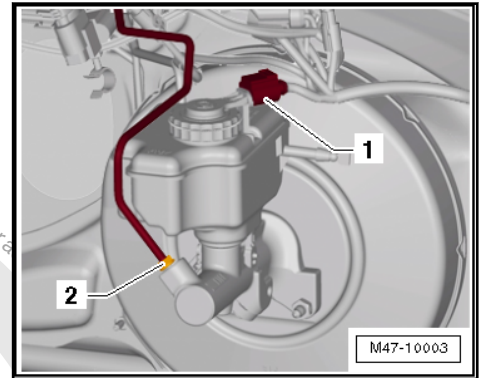
Caution

Brake lines must not be bent.

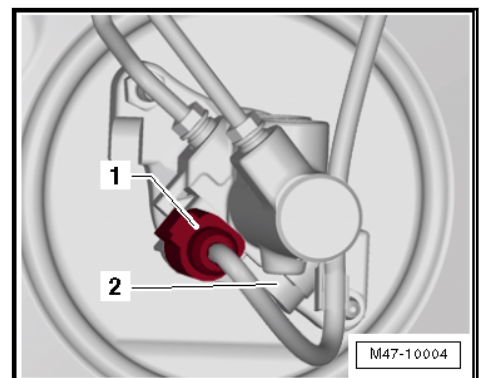
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.



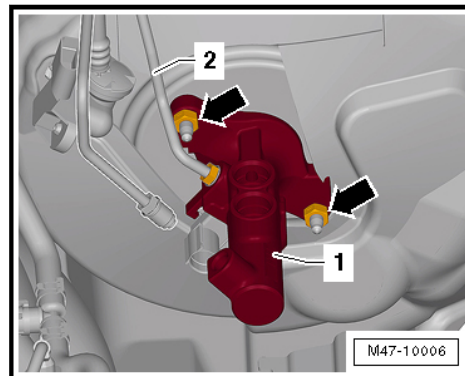
- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.



- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.



- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.



Installing

Install in reverse order of removal. Note the following:

- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal fits correctly when attaching the brake master cylinder to the brake booster.

Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

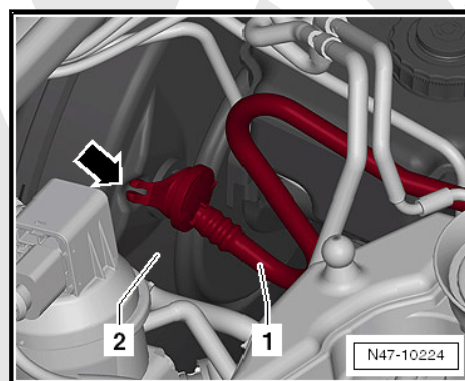
- Bleed the brake system. Refer to ➤ [S6 ystem", page 457](#) .

Vehicles with Manual Transmission

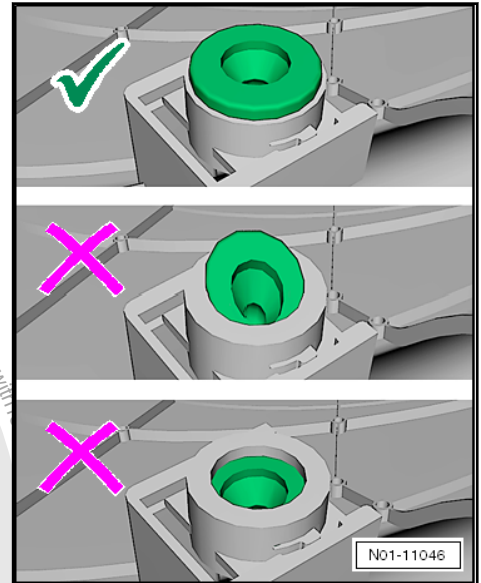
- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles

- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.



- Install and connect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



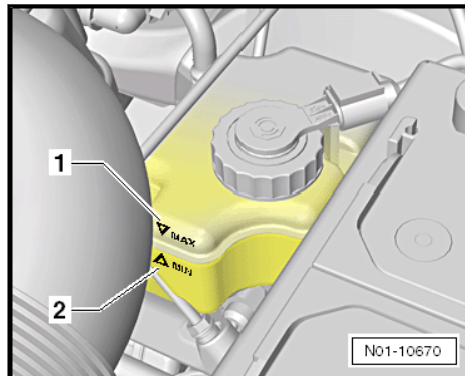
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder](#)", page [304](#)
- ◆ Refer to ➤ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.

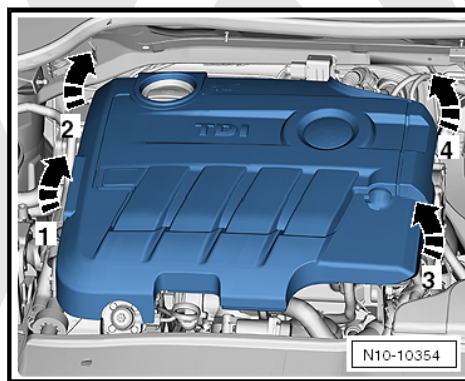


3.4.3 Master Brake Cylinder, Removing and Installing, with 4-Cylinder Diesel Engine

Special tools and workshop equipment required

- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-

Removing



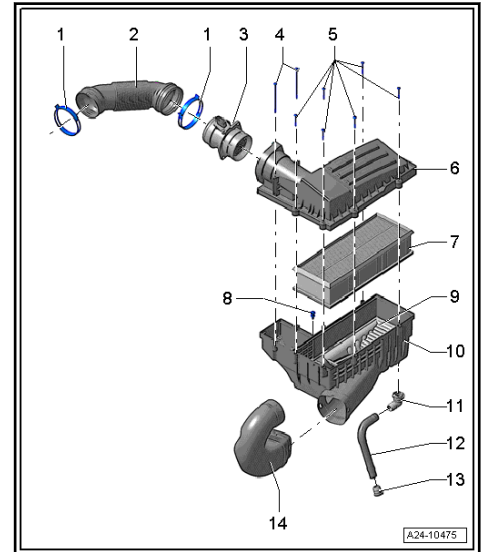
- Remove engine cover in direction of -arrows-.
- Observe the given sequence in direction of -arrows 1 through 4-.
- Reach under the engine cover as far as possible.



Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always remove the engine cover according to the following procedure.

- Remove the intake hose -2-. Refer to ⇒ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.

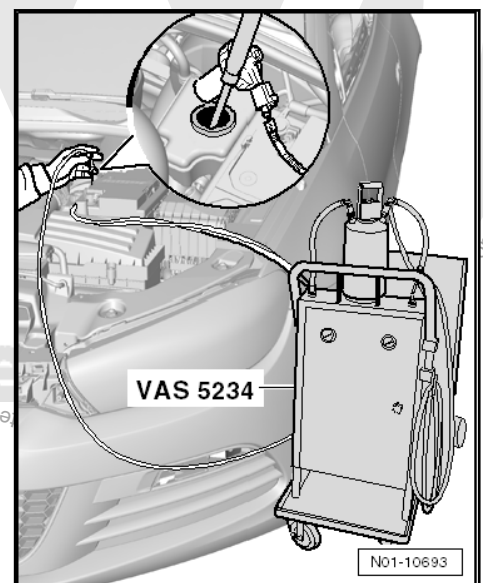


Caution

Danger of causing damage to electronic components when disconnecting the battery.

◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.

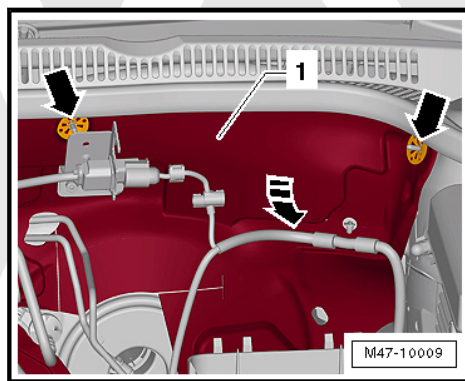




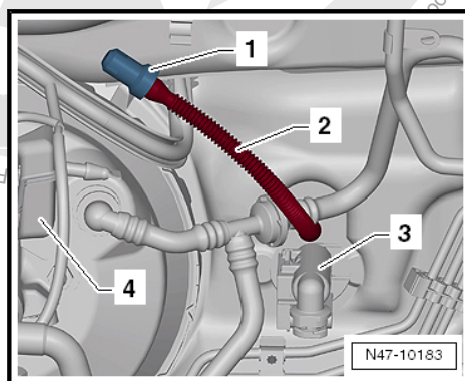
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- Remove the star-shaped washers -arrows-.
- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



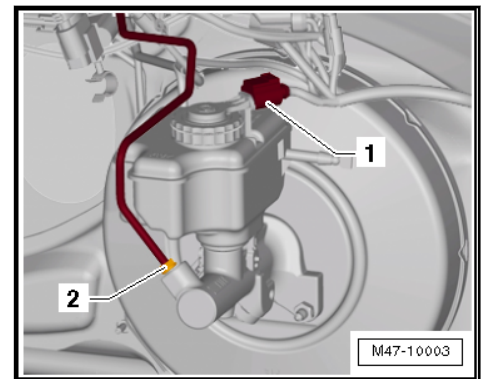
Vehicles with Manual Transmission



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.



Continuation for All Vehicles



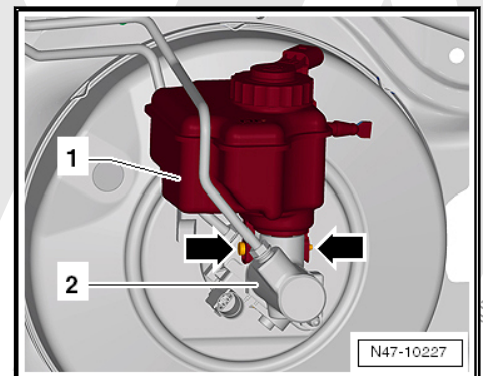
Caution

Brake lines must not be bent.

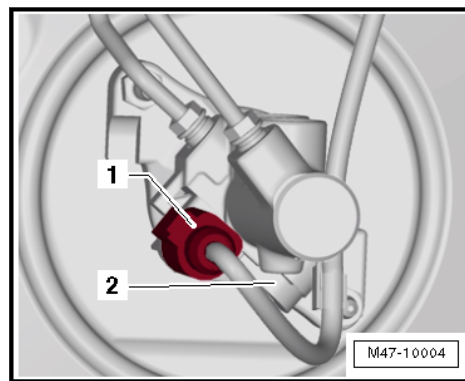
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

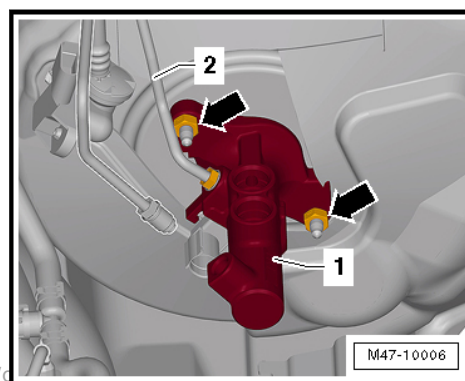
- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Carefully pry the brake fluid reservoir -1- off the retaining tabs -arrows- on the brake master cylinder -2-.



- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.



- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.
- Seal the brake lines with the Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take brake master cylinder out of brake booster.



Installing

Install in reverse order of removal. Note the following:

- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.

Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

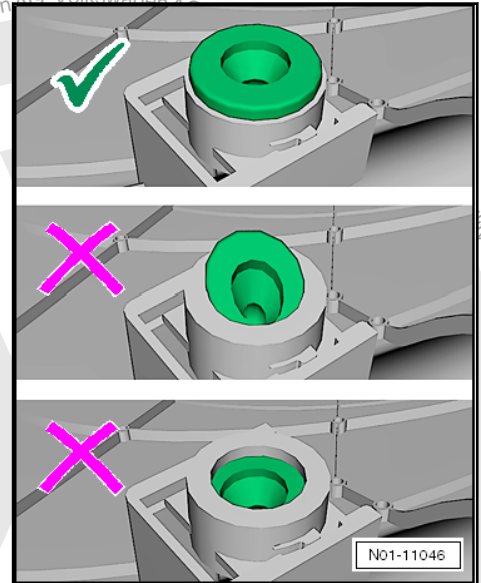
- Bleed the hydraulic system. Refer to ⇒ [S6 ystem", page 457](#).

Vehicles with Manual Transmission

- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism Bleeding.

Continuation for All Vehicles

- Install and connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



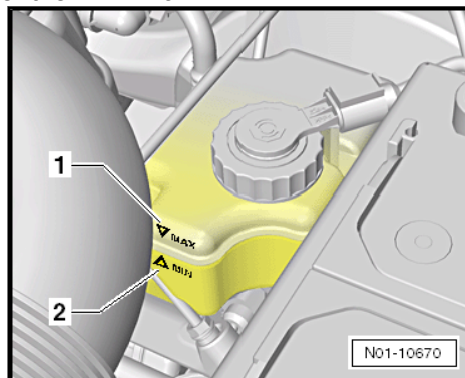
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder](#), page 304
- ◆ Refer to ➤ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.
- ◆ Refer to ➤ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.

3.4.4 Brake Master Cylinder, Removing and Installing, Hybrid

Special tools and workshop equipment required

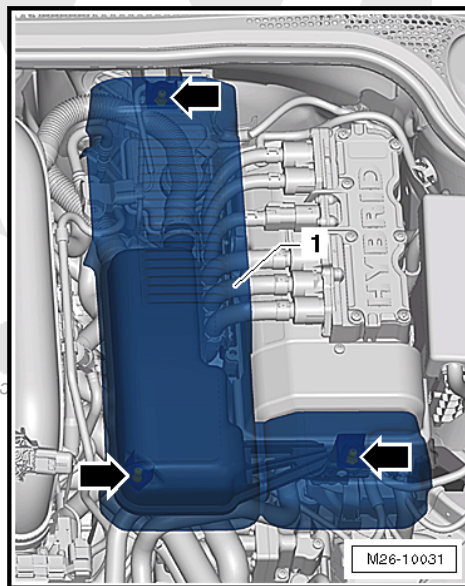


- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-

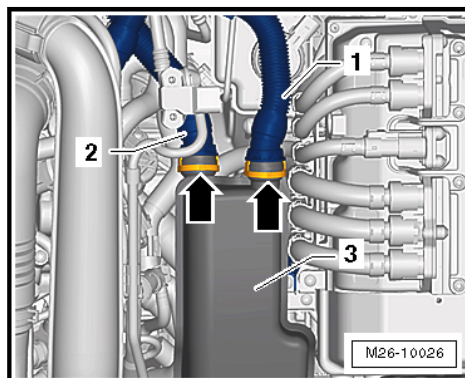
Perform the Following:

Removing

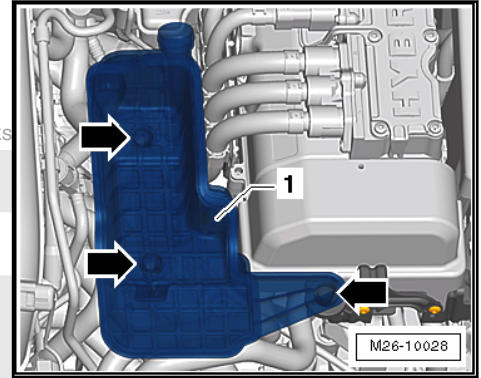
Vehicles with Engine Code CNLA



- Remove the air damper cover -1- from the retainers -arrows-.
- Disconnect the air line -1 and 2- from the air damper -3-.

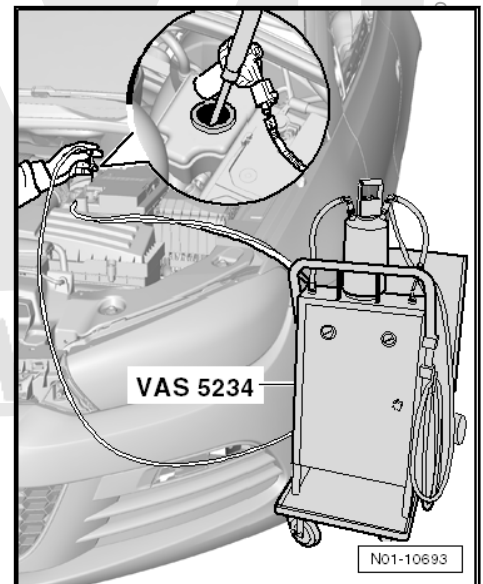


- Press the locking rings -arrows- together on both sides and disconnect the lines.
- Remove the air damper -1- from the rubber bushings -arrows-.



Continuation for All Vehicles

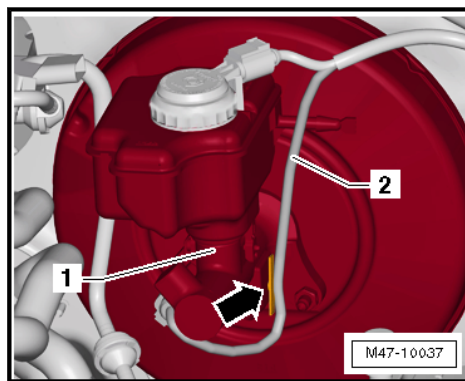
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



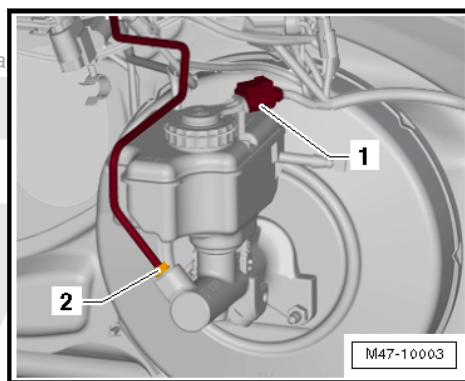
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- Unclip the wiring harness -2- on the brake master cylinder -1- -arrows-.



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



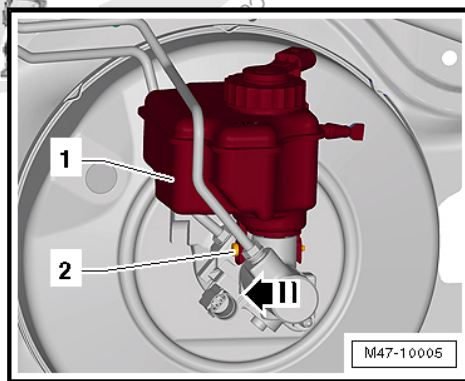
Caution

Brake lines must not be bent.

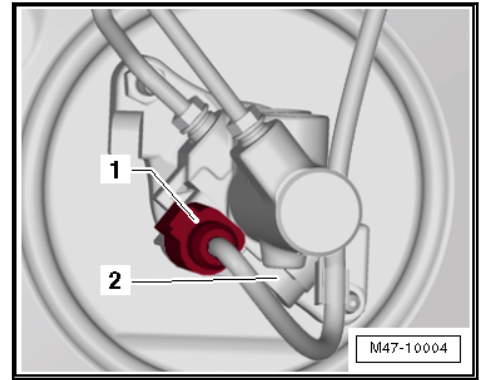
Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

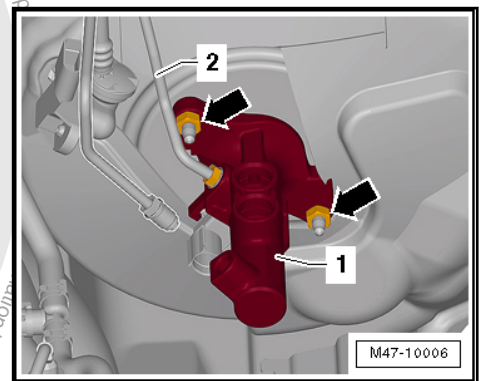
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1- H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.



- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.



- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.



- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.

Continuation for All Vehicles

- Carefully remove the brake booster from the vehicle.

Installing

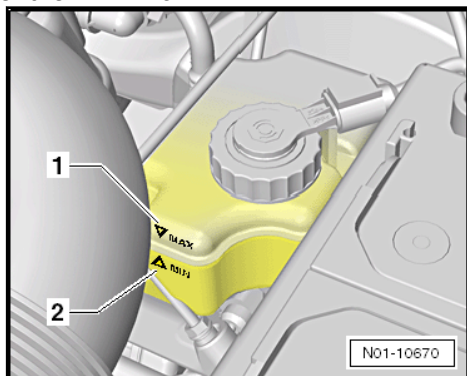
Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the nuts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal -item 5- ➔ [Item 5 \(page 305\)](#) fits correctly when assembling the brake master cylinder with the brake booster.
- Make sure the sealing plugs -item 13- ➔ [Item 13 \(page 306\)](#) are seated correctly in the brake master cylinder.
- Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.
- Bleed the brake system. Refer to ➔ [S6 ystem", page 457](#) .



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ⇒ Rep. Gr. 26; Secondary Air System; Overview - Secondary Air Injection System.
- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.

3.4.5 Master Brake Cylinder, Removing and Installing, RHD with 4-Cylinder Gasoline Engine

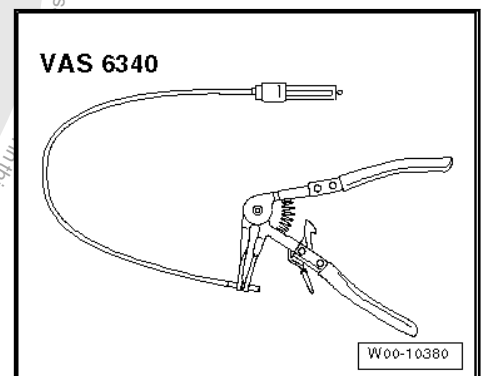




Special tools and workshop equipment required

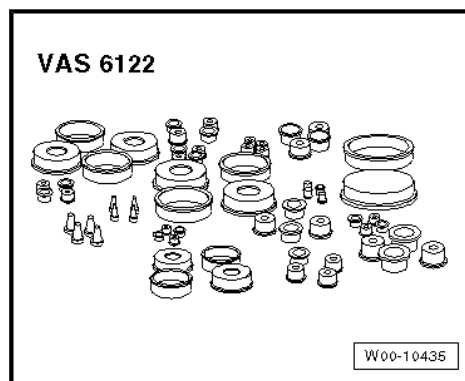
<p>T10159</p>	<p>T10249</p>
<p>V.A.G 1331</p>	<p>VAS 5234</p>
	<p>W47-10005</p>

- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-

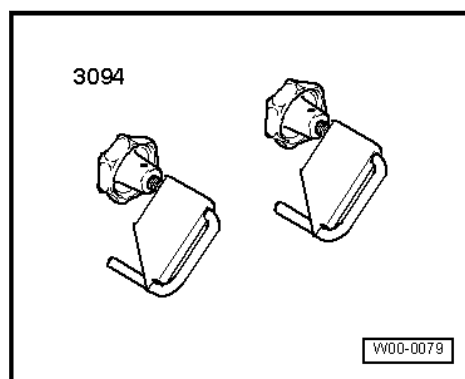




◆ Engine Bung Set -VAS6122-



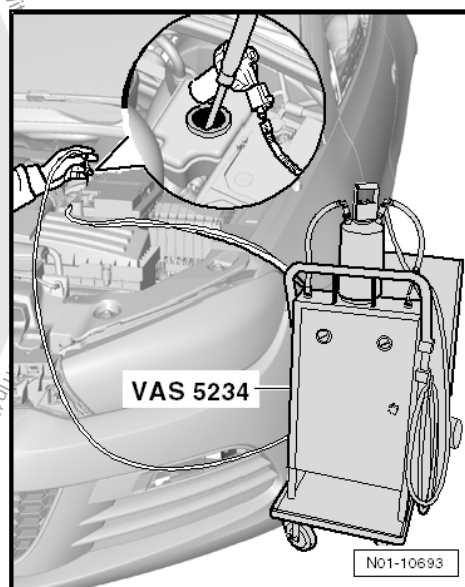
◆ Hose Clamps - Up To 25 mm -3094-



Perform the following:

Removing

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.

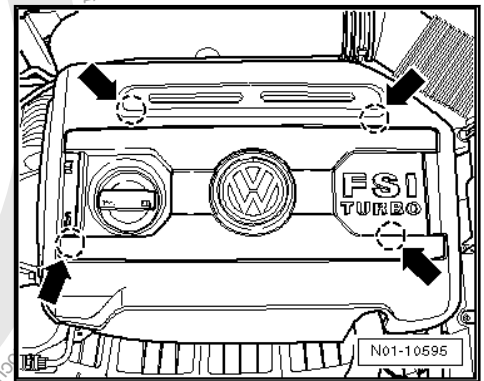




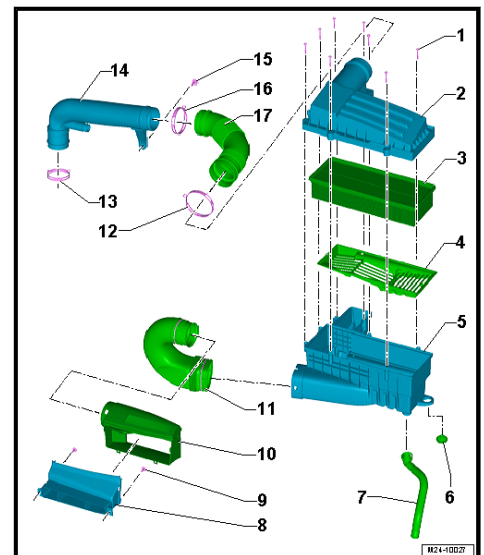
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

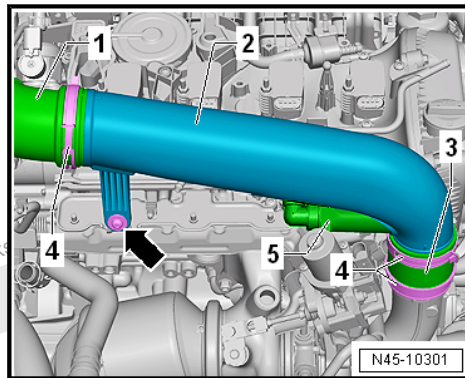
Vehicles with 2.0L gasoline engine and turbocharger



- Remove the engine cover upward from the attaching points -arrows-. Refer to ➔ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

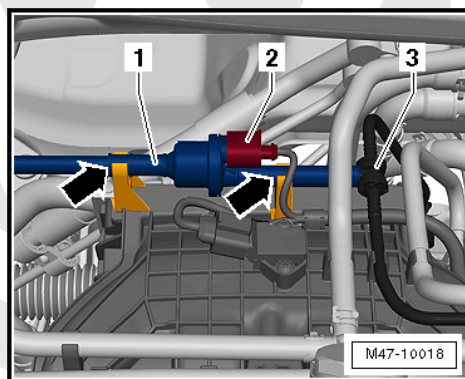


- Open the clamp -12- and remove the air guide hose -17- from the air filter -2-. Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- Open the clamps -4-.

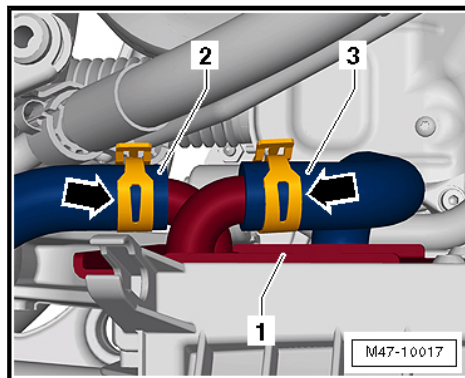


- Remove the air guide hose -1-.
- Remove the screw -arrow- for the air guide pipe -2-.
- Remove the air guide pipe -2-.
- Remove the intake hose -3- between the air guide pipe and the turbocharger.
- Seal the turbocharger with the Engine Bung Set -VAS6122-.

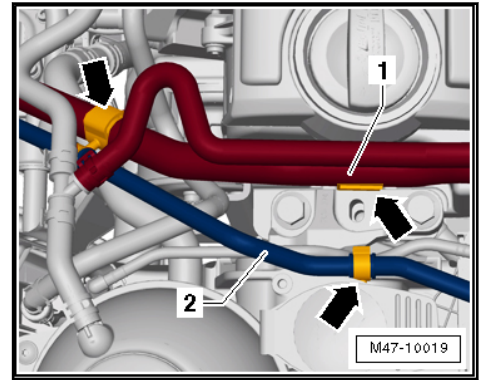
Vehicles with 1.4L 90 kW gasoline engine with turbocharger



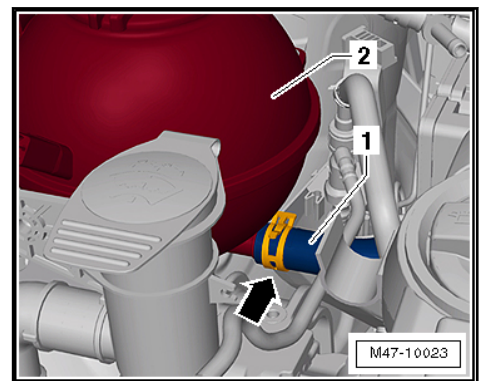
- Disengage connector -2- at wire -1- and remove.
- Unclip wire -1- at intake manifold from brackets -arrows-.
- Remove wire -1- at coupling point -3-.
- Remove coolant hose -2- at charge air cooler -1-.



- To do this, open clamp -arrow-.
- Unclip wire -2- and coolant hoses -1- from brackets -arrows-.

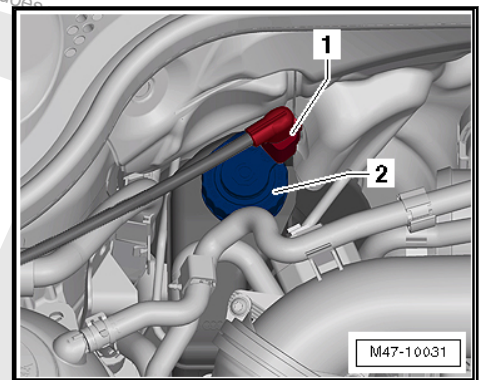


- Set wire -2- and coolant hose -1- aside.
- Remove coolant hose -1- at coolant reservoir -2-.

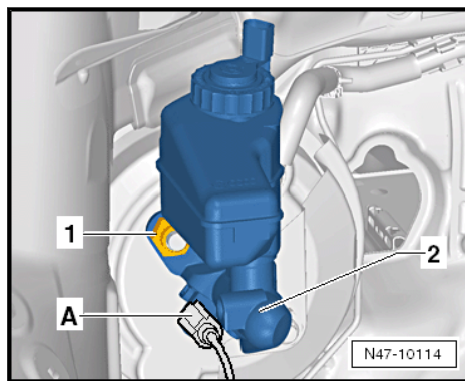


- To do this, open clamp -arrow-.
- Move the coolant hoses to the side.

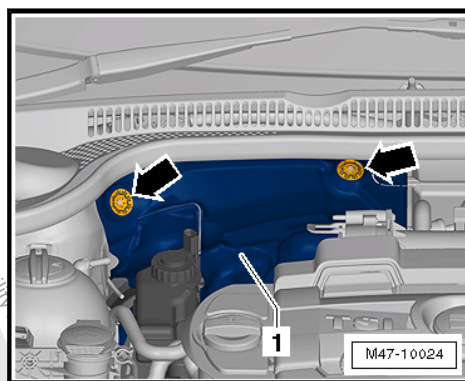
Continuation for All Vehicles:



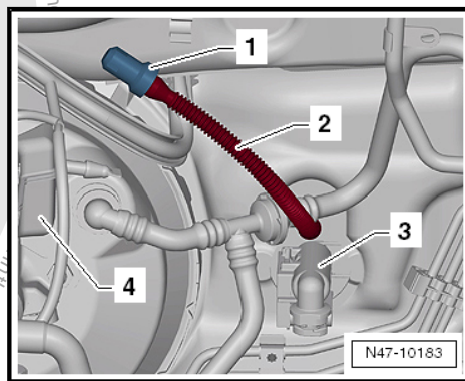
- Disconnect the connector -1- from the Brake Fluid Level Warning Switch -F34- -2-.
- Disconnect and remove the connector -A- from the Brake Lamp Switch -F-.



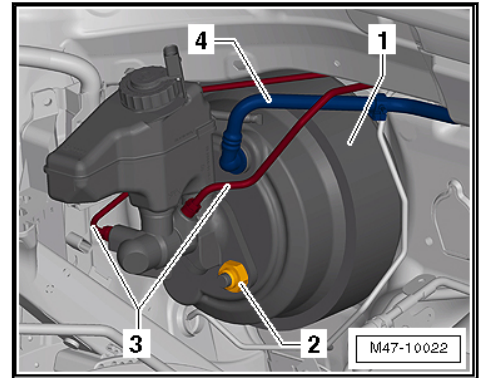
- Remove securing plate -arrows- and fold the noise insulation -1- forward.



Vehicles with Manual Transmission:



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove brake lines -3- on the master brake cylinder -1-.



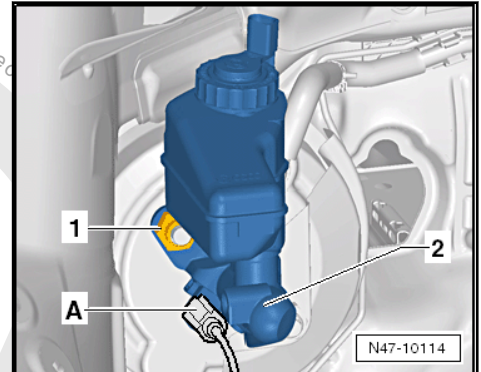
Caution

Brake lines must not be bent.

Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

- Seal off the brake lines with the plugs from the Repair Kit -1H0 698 311 A-.
- Remove the nut -2-.
- Remove the heat shield, if equipped.
- Remove the nut -1-.



- Carefully take the brake master cylinder -2- out of the brake booster.

Installing

Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the bolts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal fits correctly when attaching the master brake cylinder to the brake booster -item 13- ➔ [item 13 \(page 308\)](#).
- Bleed the brake system. Refer to ➔ [S6 system](#), page 457.
- Check the coolant level. Refer to ➔ Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling.



Vehicles with Manual Transmission:

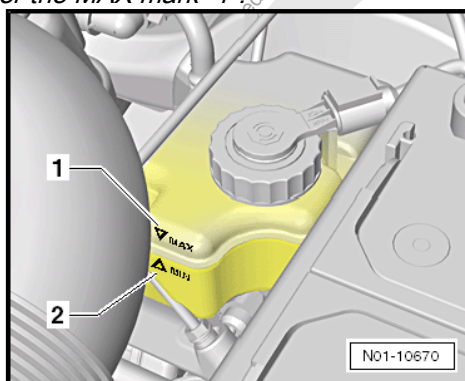
- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles:



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-



Tightening Specifications

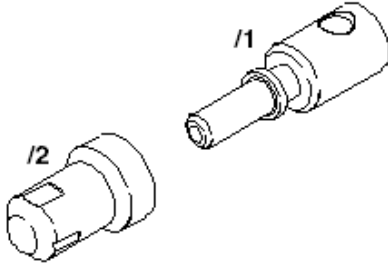

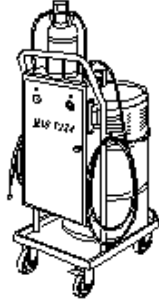
- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Air filter. Refer to ⇒ Rep. Gr. 23; Diesel Direct Injection System; Overview - Air Filter.
- ◆ Battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ Refer to ⇒ Rep. Gr. 19; Coolant System/Coolant; Connection Diagram - Coolant Hoses.
- ◆ Refer to ⇒ Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

3.4.6 Master Brake Cylinder, Removing and Installing, RHD with 4-Cylinder Diesel Engine

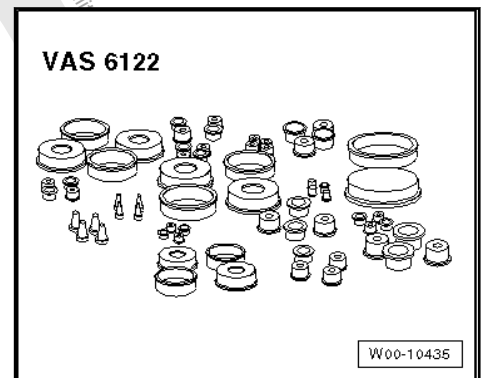
NOT FOR NORTH AMERICAN MARKET



Special tools and workshop equipment required

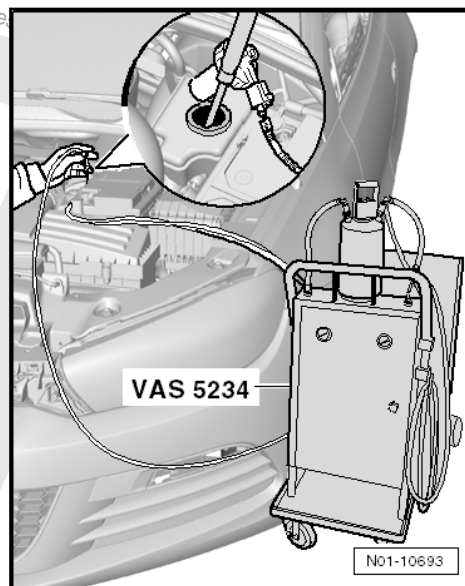
<p>T10249</p> 	<p>V.A.G 1331</p> 
<p>VAS 5234</p> 	
	<p>W47-10006</p>

- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Engine Bung Set -VAS6122-





Removing



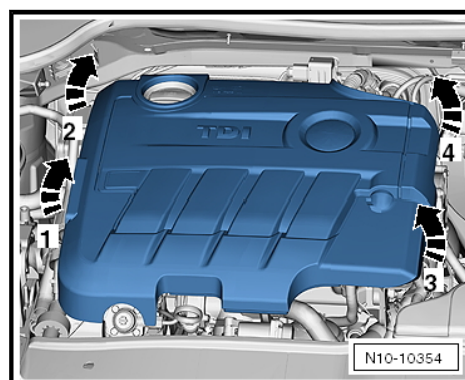
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- Remove the noise insulation. Refer to ➔ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Remove engine cover near -arrows-.



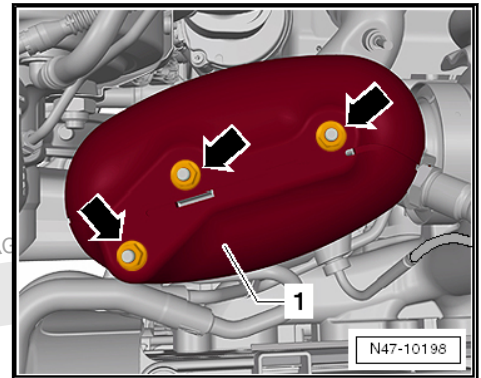
- Observe the given sequence -1- through -4-.
- Reach as far as possible under the engine cover.



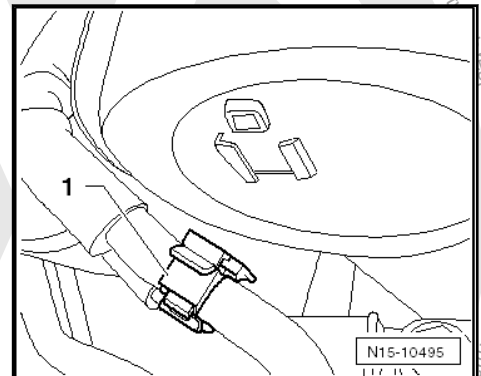
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always remove the engine cover according to the following procedure.

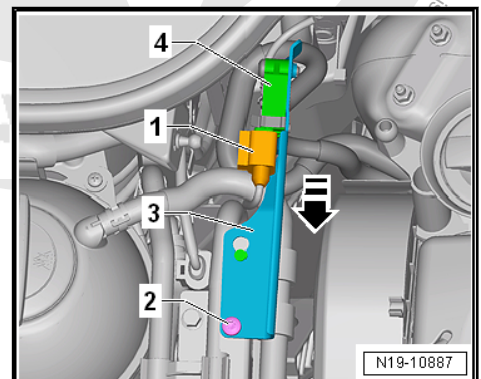
- Remove the nuts -arrows- and then remove the heat shield -1- from the diesel particulate filter.



- Release and remove the bracket -1- from the toothed belt guard.



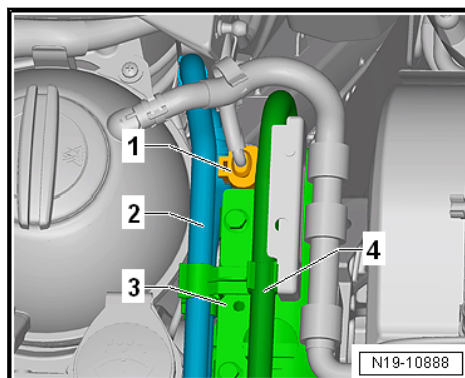
Vehicles with 2.0L diesel engines



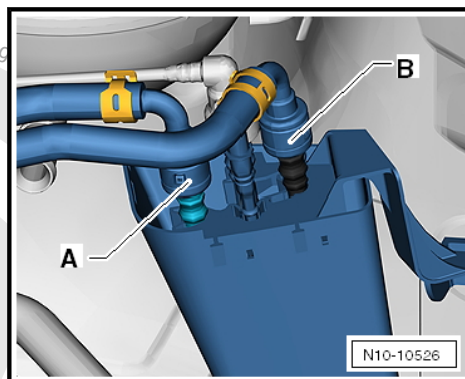
- Disconnect the connector -1- from the Oil Pressure Switch -F1-.
- Remove the bolt -2-.
- Push the bracket -3- for the Differential Pressure Sensor -G505- in the -direction of the arrow- from the guide.
- Move the bracket -3- with the lines still attached to the side.



- Release and disconnect the connector -1-.



- Unclip the fuel lines -2- from the bracket -3-.
- Unclip the washer fluid hose -4- from the bracket -3-.
- Open the couplings -A- and -B- and remove the fuel lines.
Open the couplings. Refer to ⇒ Rep. Gr. 20; Connector Couplings; Connector Couplings, Separating.



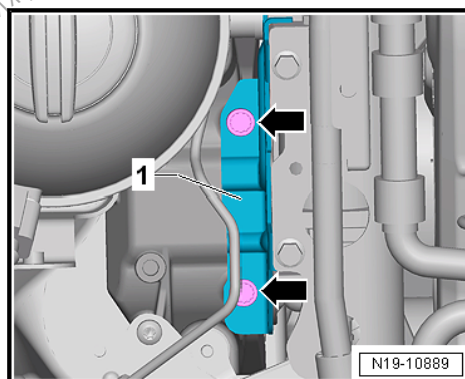
WARNING

The fuel line is under pressure.

Fuel poses a risk of injury to the eyes and skin.

Wear protective eyewear and protective clothing to avoid injury and contact with skin. Place a cleaning cloth around the connection point before loosening hose connections. Carefully open the connection point to release the pressure.

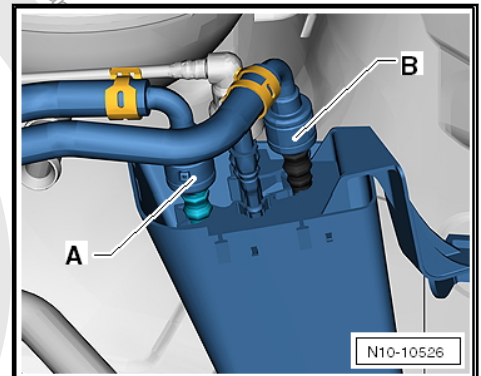
- Move the fuel lines to the side.
- Remove the bolts -arrows-.





- Move the Auxiliary Fuel Pump -V393- or Fuel Pump 2 -V277- -1- with the lines still attached to the side.

Vehicles with 1.6L diesel engines



- Open the couplings -A- and -B- and remove the fuel lines. Open the couplings. Refer to ➤ Rep. Gr. 20; Connector Couplings, Connector Couplings, Separating.



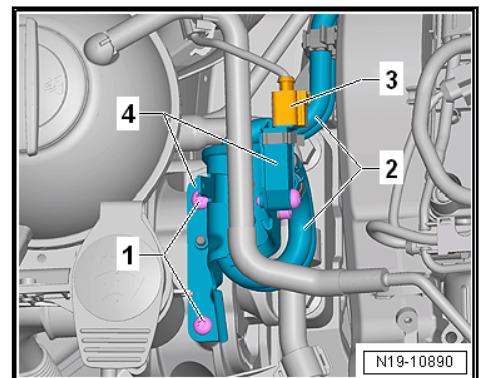
WARNING

The fuel line is under pressure.

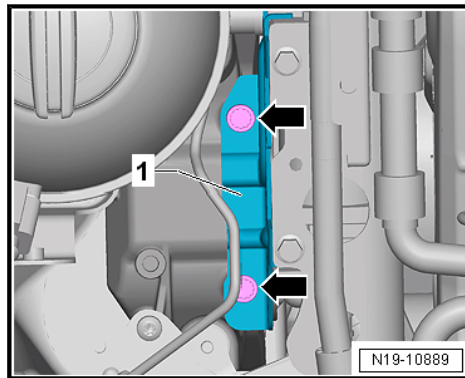
Fuel poses a risk of injury to the eyes and skin.

Wear protective eyewear and protective clothing to avoid injury and contact with skin. Place a cleaning cloth around the connection point before loosening hose connections. Carefully open the connection point to release the pressure.

- Unclip and free up the fuel lines.
- Move the fuel lines to the side.
- Disconnect and remove the connector -3- from the Differential Pressure Sensor -G505- -4-.

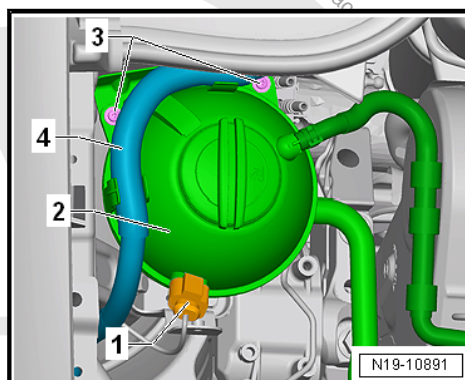


- Unclip the hoses -2- from the retainer.
- Remove the bolts -1-.
- Set the Differential Pressure Sensor -G505- -4- with lines attached to the side.
- Move the fuel lines to the side.
- Remove the bolts -arrows-.

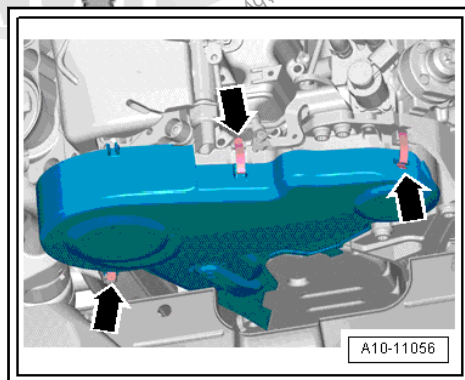


- Move the Auxiliary Fuel Pump -V393- or Fuel Pump 2 -V277- -1- with the lines still attached to the side.

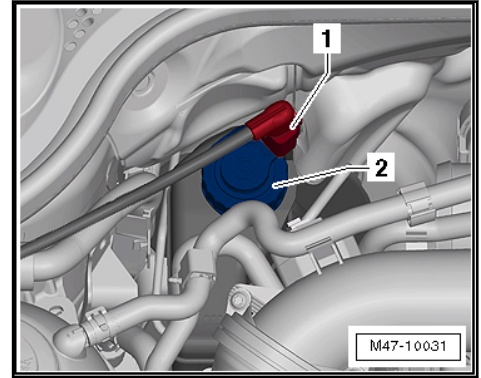
Continuation for All Vehicles



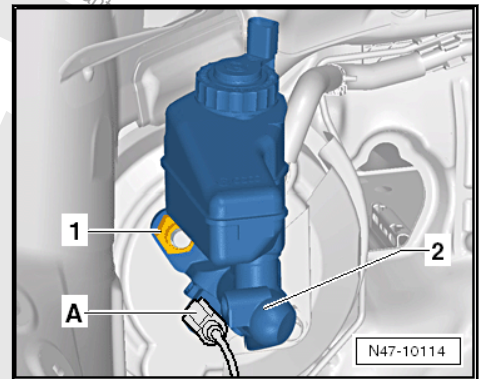
- Release and remove the connector -1- from the coolant expansion tank -2-.
- Unclip the wire -4- from the coolant expansion tank -2- and set aside.
- Remove the bolts -3- and the coolant expansion tank -2-.
- Move the coolant expansion tank upward and set aside.
- Open the clips -arrows- and remove the upper toothed belt cover.



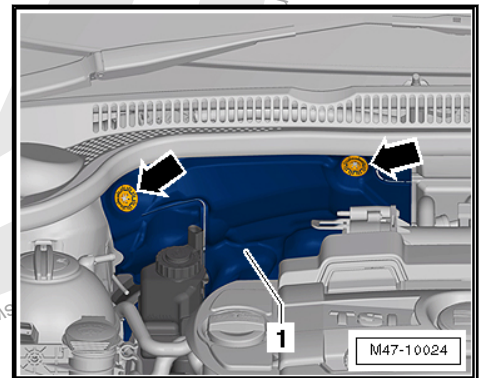
- Disconnect the connector -1- from the Brake Fluid Level Warning Switch -F34- -2-.



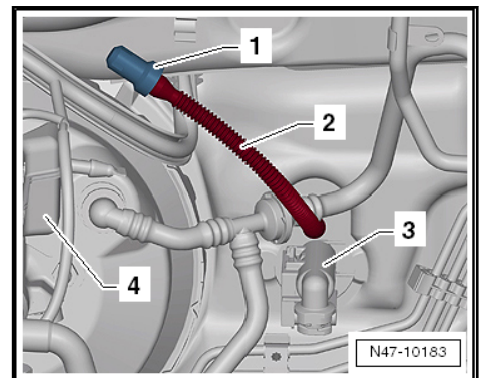
- Disconnect and remove the connector -A- from the Brake Lamp Switch -F-.



- Remove securing plate -arrows- and fold the noise insulation -1- forward.



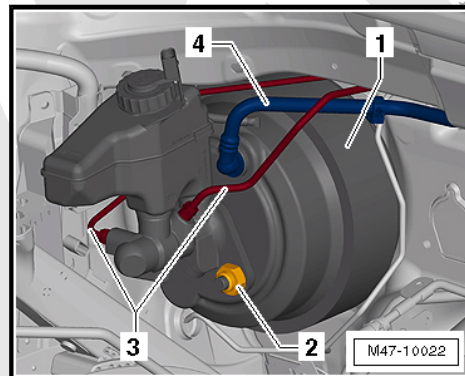
Vehicles with Manual Transmission:



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.



- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove brake lines -3- on the master brake cylinder -1-.



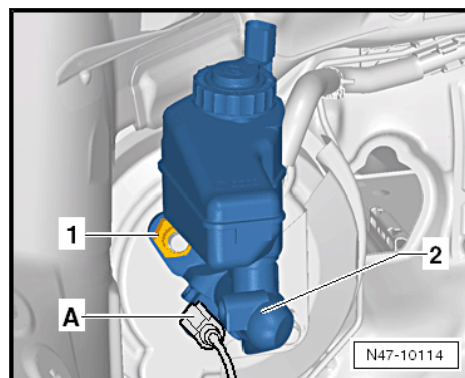
Caution

Brake lines must not be bent.

Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

- Seal off the brake lines with the plugs from the Repair Kit -1H0 698 311 A-.
- Remove the nut -2-.
- Pull the vacuum line -4- out of the brake booster -1-.
- Remove the heat shield, if equipped.
- Remove the nut -1-.



- Carefully take the brake master cylinder -2- out of the brake booster.
- Carefully remove the brake booster from the vehicle.

Installing

Install in reverse order of removal. Note the following:

- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.



- Make sure the seal fits correctly when attaching the master brake cylinder to the brake booster -item 13- ➤ [Item 13](#) (page 308) .
- Clip the brake pedal to the brake booster. Refer to ➤ [page 276](#) .
- Bleed the brake system. Refer to ➤ [S6 system", page 457](#)

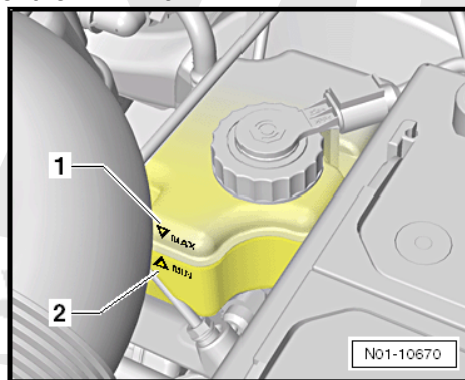
Vehicles with Manual Transmission:

- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

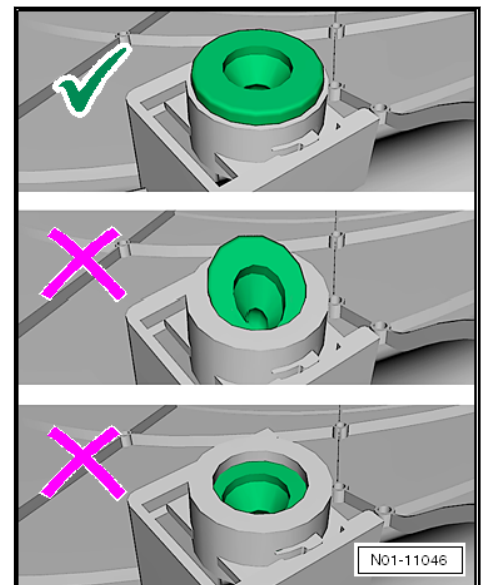


Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ➤ Body Exterior; Rep. Gr. 50; Noise Insulation.

3.5 Brake Booster, Removing and Installing

➤ [B3.5.1 ooster, Removing and Installing, with 5-Cylinder Gasoline Engine”, page 370](#)

➤ [B3.5.2 ooster, Removing and Installing, with 4-Cylinder Gasoline Engine ”, page 381](#)

➤ [B3.5.3 ooster, Removing and Installing, with 4-Cylinder Diesel Engine ”, page 390](#)

➤ [B3.5.4 ooster, Removing and Installing, Hybrid”, page 400](#)

3.5.1 Brake Booster, Removing and Installing, with 5-Cylinder Gasoline Engine

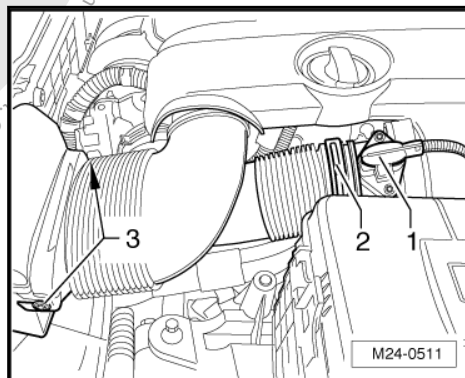
Special tools and workshop equipment required

- ◆ Brake Servo Release Tool -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-
- ◆ Hose Clamps - Up To 25 mm -3094-

Perform the Following:

Removing

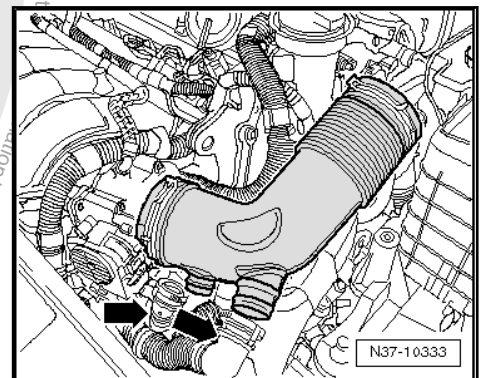
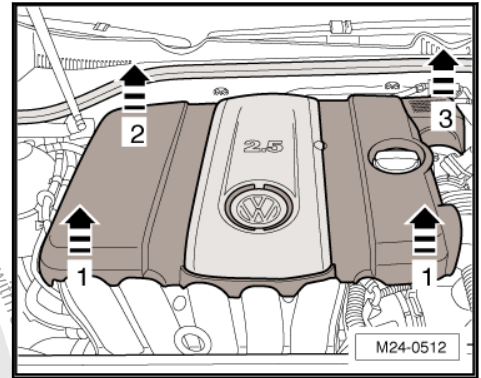
- Open clamp -2- and disconnect intake hose.
- If equipped, disconnect the connector -1- and remove.
- Remove the bolts -3- and the intake hose.



- Pull the engine with a jerk out of the fasteners first at the front in direction of -arrow 1-, then at the right rear in direction of -arrow 2- and finally at the left rear in direction of -arrow 3-.



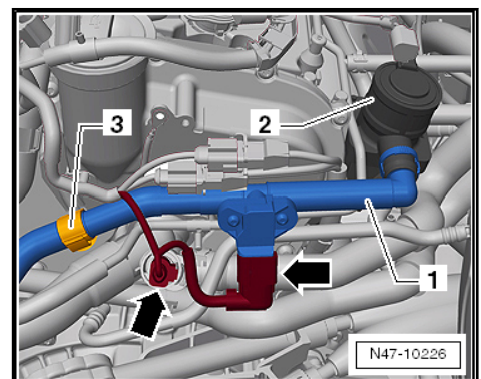
- Carefully swivel engine cover out of rear area.
- Release and remove hoses -arrows- on the intake hose.



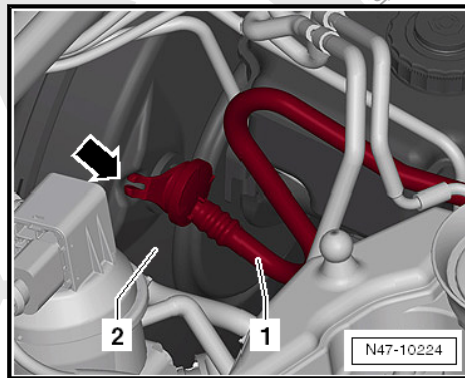
Note

Some vehicles are equipped with a 1 or 2 connectors on the intake hose.

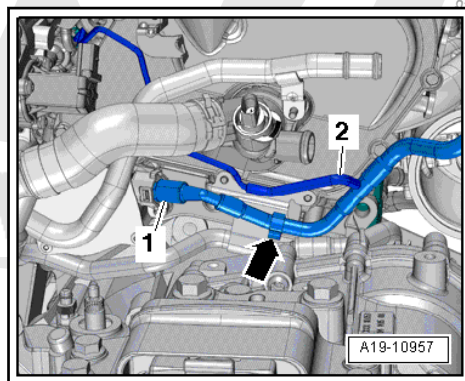
- Remove the intake hose from the Throttle Valve Control Module -J338-.
- If equipped, disconnect and remove the connector -arrows-.



- If equipped, release and remove the vent pipe -1- on the Secondary Air Injection Solenoid Valve -N112-.
- If equipped, open the bracket -3- and set the vent pipe aside.
- Remove the vacuum line -1- from the brake booster -2-.

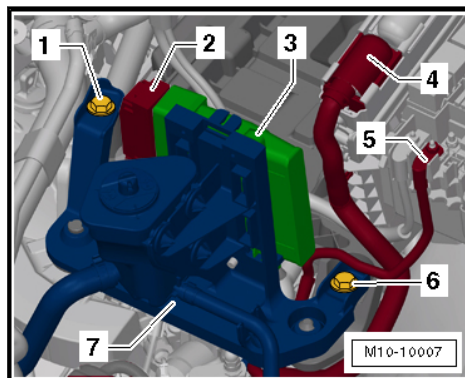


- Remove the vacuum hose -2- (if equipped).



- Open the bracket -arrow- and free up the vacuum line -1-.
- Pull the vacuum line -1- off the vacuum pump and then remove the vacuum line -1-.

Vehicles with Automatic Transmission



- Release the retaining tab and remove the Transmission Control Module -J217- from the bracket.
- Unclip the wiring harness on the bracket and move the Transmission Control Module -J217- to the side.
- Remove the bolts -1 and 6-.

Vehicles with Hydraulic Power Steering:

- Remove the bolts -1 and 6-.
- Move the bracket -7- with the power steering fluid reservoir to the side.



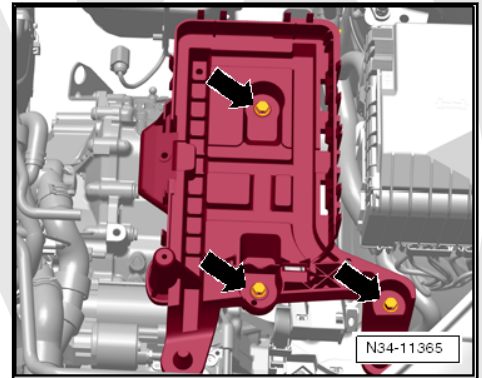
Continuation for All Vehicles



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery and the battery tray. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.



- Remove the bolts -arrows-.

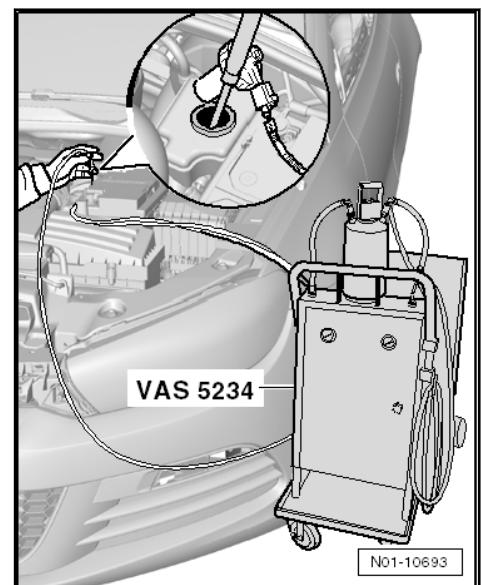


Caution

Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



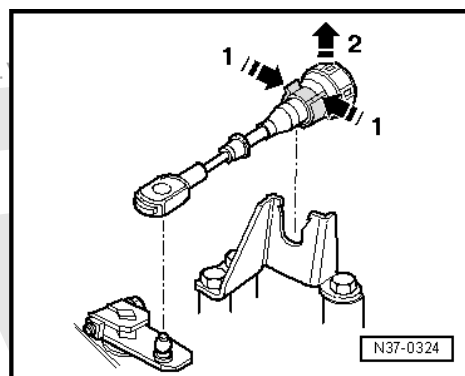


WARNING

- ◆ *Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.*
- ◆ *Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*
- ◆ *Extracted brake fluid cannot be used again.*
- ◆ *Follow all disposal regulations.*

Vehicles with Automatic Transmission

- Remove the noise insulation or impact guard. Refer to ➔ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Remove the selector lever cable from the transmission. Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Move the selector lever into »P«.

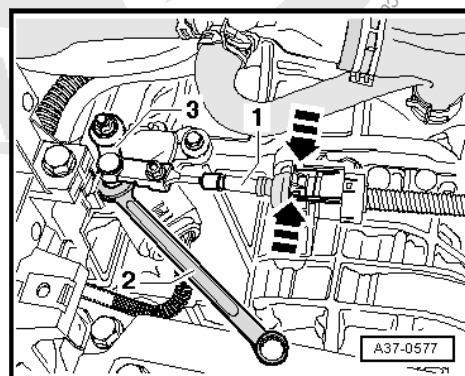


- To remove the selector lever cable from the transmission, first disconnect the cable -1- and then remove it from the cable bracket -2-.



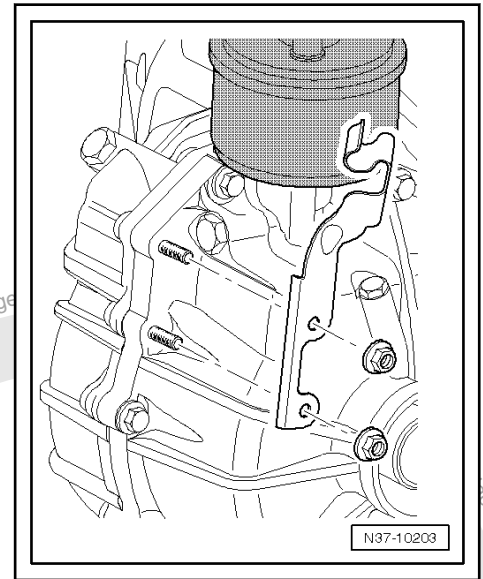
Note

- ◆ *Do not use pliers otherwise the tabs on the cable could break off.*
- ◆ *Do not bend or kink the selector lever cable.*
- Pry the cable -1- off the lever -3- using a -2-.

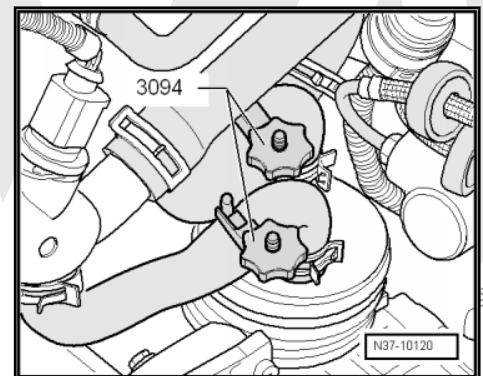




- Remove the selector lever cable bracket from the transmission.

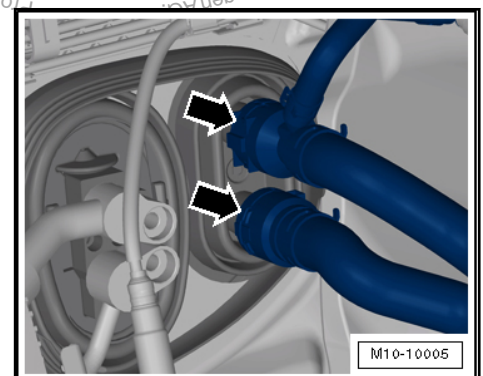


- Position the Hose Clamps - Up To 25mm -3094- on the coolant hoses and close them.

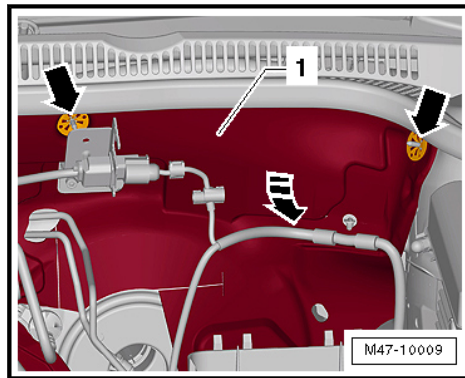


- Remove the coolant hose from the ATF cooler.

Continuation for All Vehicles



- Position the Hose Clamps - Up To 25mm -3094- on the coolant hoses -arrows- and close them.
- Remove the coolant hoses -arrows- from the heater core.
- Move the coolant hoses to the side.
- Remove the star-shaped washers -arrows-.



- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.

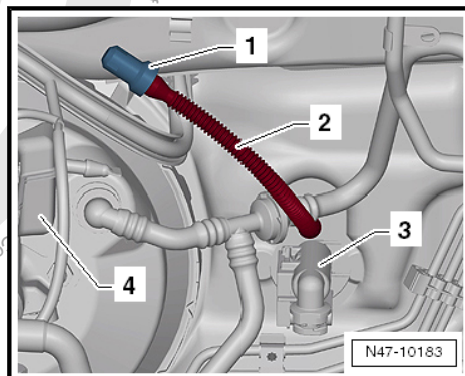


Note

It is not necessary to remove the insulation.

Vehicles with Manual Transmission

- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.



- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove the selector mechanism from the transmission. Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Remove the bracket from the selector mechanism on the transmission. Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.



Note

It is necessary to separate the cable retainer from the selector cable prior to removing to prevent damaging the selector cable.



Continuation for All Vehicles



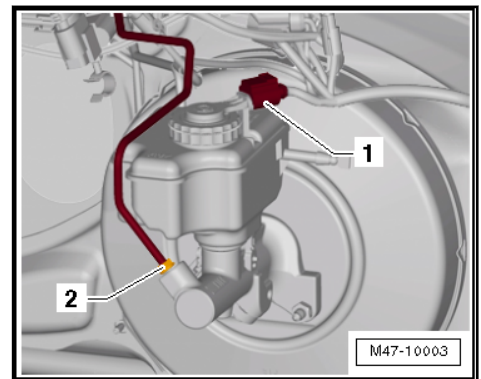
Caution

Brake lines must not be bent.

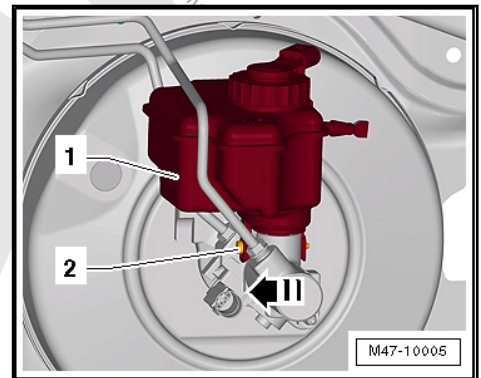
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

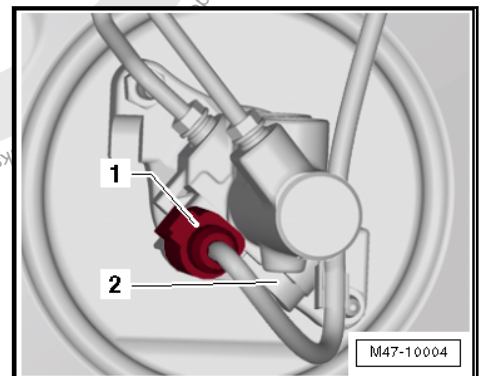
- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.

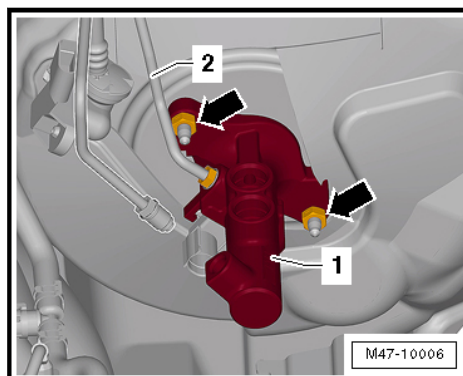


- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.

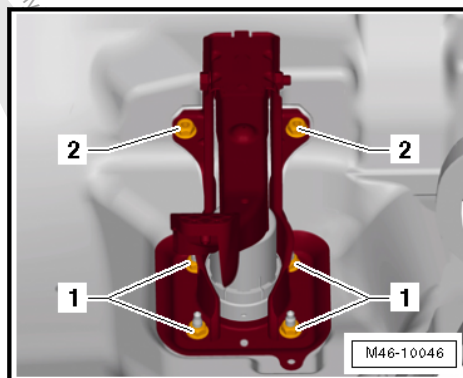




- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.



- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.
- Disconnect the brake pedal from the brake booster. Refer to [⇒ P4.3 edal, Disconnecting from Brake Booster”, page 275](#)
- Remove the threaded connection -1- from the brake booster on the pedal bracket.



Note

It is not necessary to loosen the threaded connection -2-.

- Carefully remove the brake booster from the vehicle.

Installing



Note

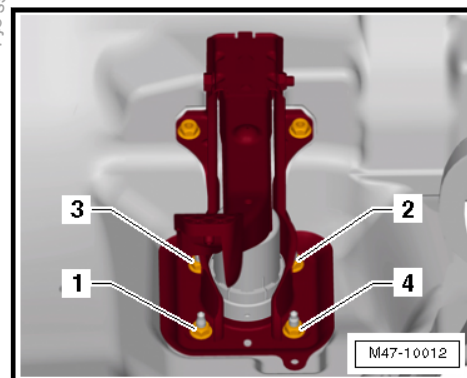
- ◆ *The brake booster is also bonded with the seal at the factory only.*
- ◆ *The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.*

Install in reverse order of removal. Note the following:



- Carefully install the brake booster and tighten the nuts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal fits correctly when attaching the brake master cylinder to the brake booster.
- Clip the brake pedal to the brake booster. Refer to ➤ [page 276](#).

Follow the Tightening Sequence:



- Tighten nuts -1- through -4- in the sequence shown in the illustration.

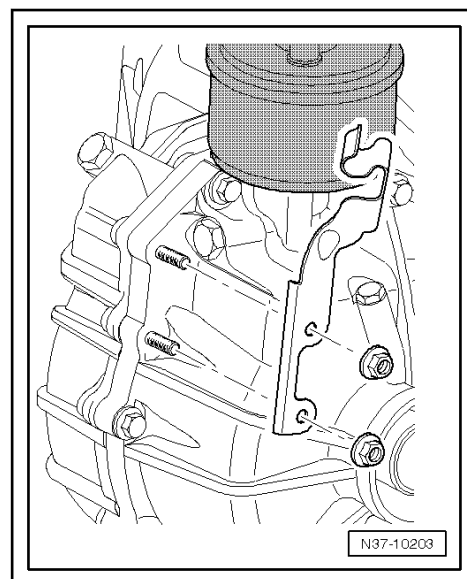
Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Bleed the brake system. Refer to ➤ [S6 ystem", page 457](#).

Vehicles with Manual Transmission

- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

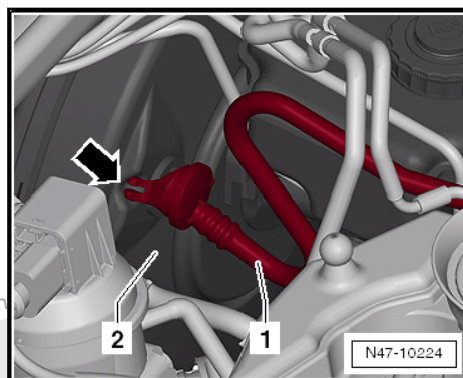
Vehicles with Automatic Transmission



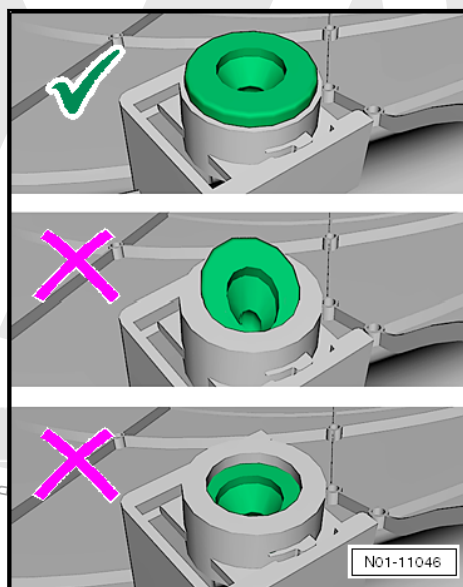
- The selector lever cable bracket must not touch the ATF cooler.



Continuation for All Vehicles



- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.
- Install and connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Check the coolant level. Refer to ⇒ Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



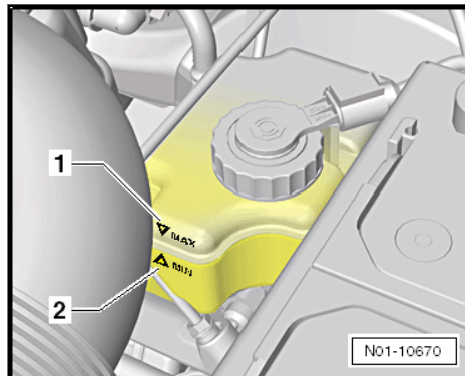
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder-, page 304](#)
- ◆ Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- ◆ Refer to ⇒ Rep. Gr. 37.

3.5.2 Brake Booster, Removing and Installing, with 4-Cylinder Gasoline Engine

Special tools and workshop equipment required

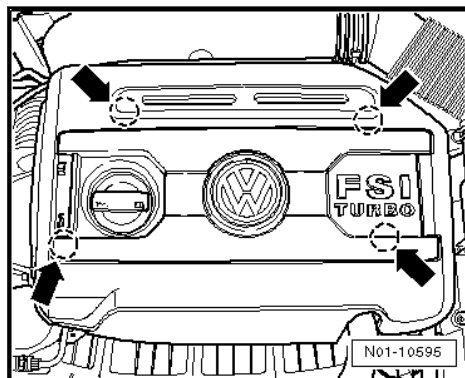
- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-



Perform the Following:

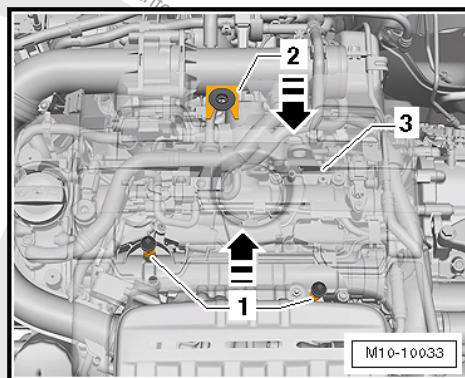
Removing

Vehicles with 2.0 L Gasoline Engine and Turbocharger



- Remove the engine cover upward from the attaching points in direction of -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

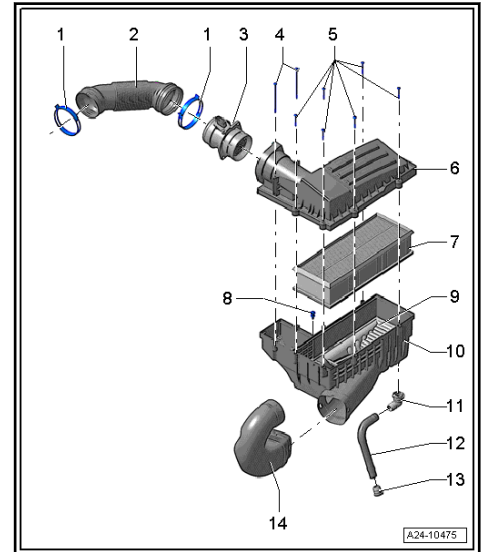
Vehicles with 1.4L Gasoline Engine, Turbocharger and Compressor:



- Lift engine cover -3- upward at points -1- in direction of -arrow-.
- Pull cover out of bracket -2- in direction of -arrow-.

Continuation for Both Engines

- Remove the intake hose -2-. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.



- To do this, loosen clamps -1-.
- Seal the openings with the Engine Bung Set -VAS6122-.

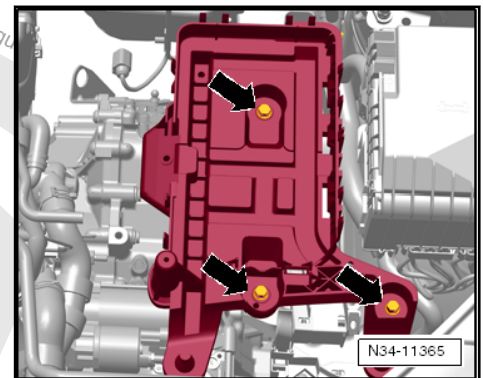
Continuation for All Vehicles



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.



- Remove bolts -arrows- to remove battery tray. Refer to ⇒ Electrical System; Rep. Gr. 27; Battery; Battery Tray, Removing and Installing.



Caution

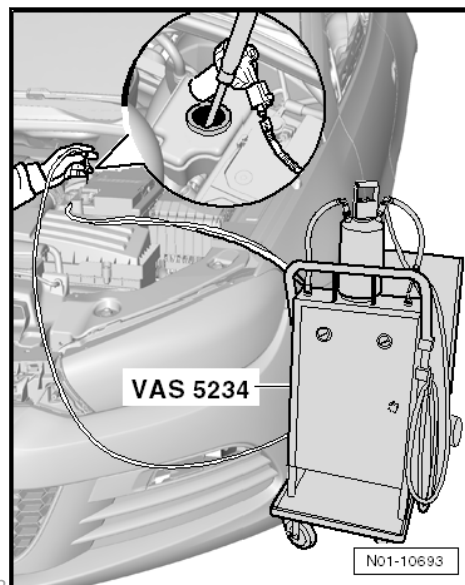
Danger of causing damage to electronic components when disconnecting the battery.

◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmission.



- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



WARNING

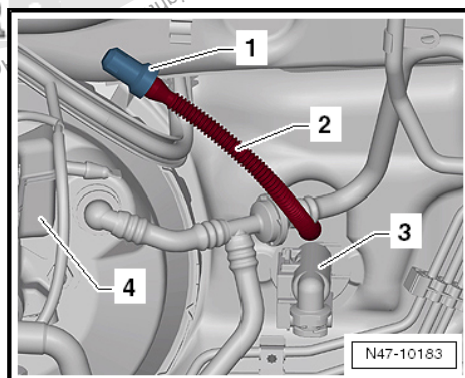
- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

Vehicles with DSG® Transmission

- Remove the selector lever cable from the ball head and out of the cable bracket. Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Remove the selector lever from the selector shaft on the transmission. Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.

Vehicles with Manual Transmission

- Remove the supply hose -2- for the clutch master cylinder
-3- from the brake fluid reservoir -4-





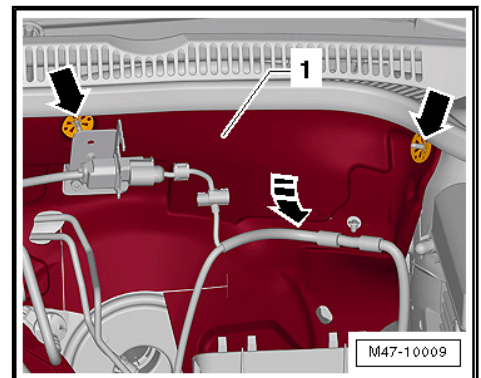
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove the selector mechanism from the transmission. Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.



Note

It is necessary to separate the cable retainer from the selector cable prior to removing to prevent damaging the selector cable.

Continuation for All Vehicles



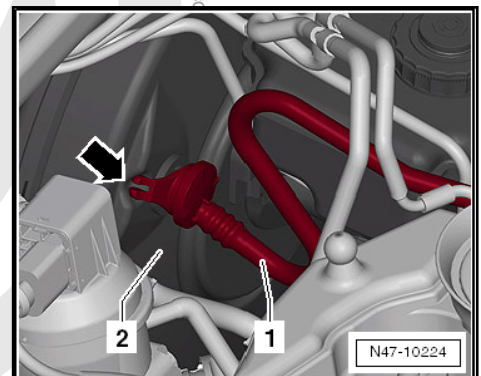
- Remove the star-shaped washers -arrows-.
- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



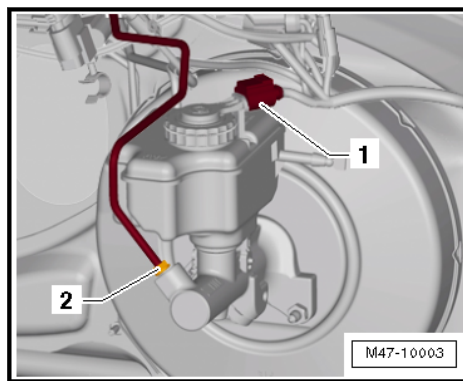
Note

It is not necessary to remove the insulation.

- Pull the vacuum line -1- out of the brake booster -2-.



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



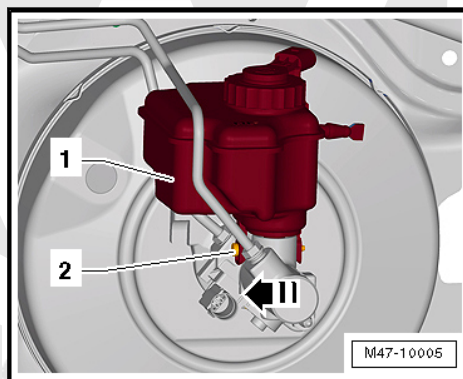
Caution

Brake lines must not be bent.

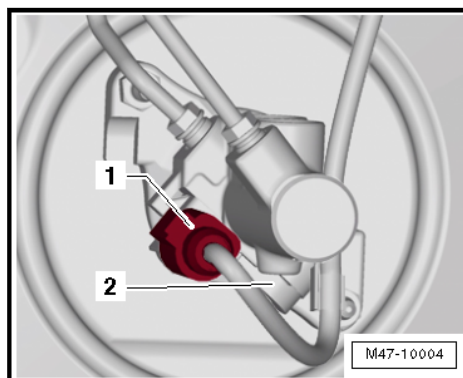
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

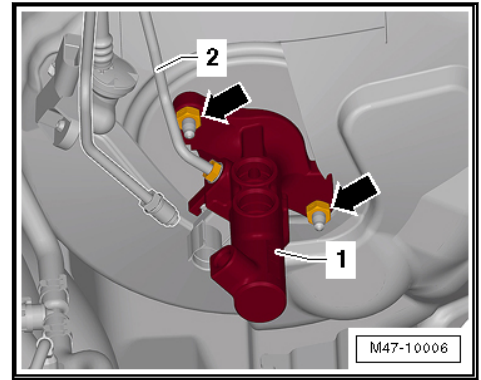
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.



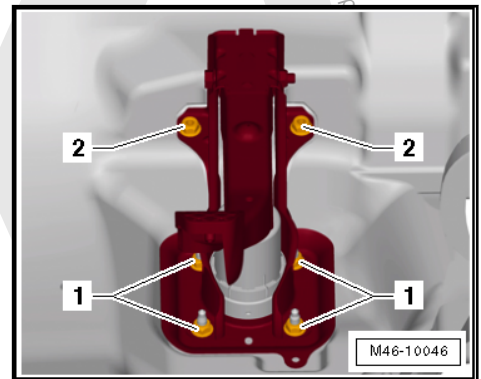
- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.



- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.



- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.
- Disconnect the brake pedal from the brake booster. Refer to [⇒ P4.3 edal, Disconnecting from Brake Booster”, page 275](#).
- Remove the threaded connection -1- from the brake booster on the pedal bracket.



Note

It is not necessary to loosen the threaded connection -2-.

Continuation for All Vehicles

- Carefully remove the brake booster from the vehicle.

Installing



Note

- ◆ *The brake booster is also bonded with the seal at the factory only.*
- ◆ *The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.*

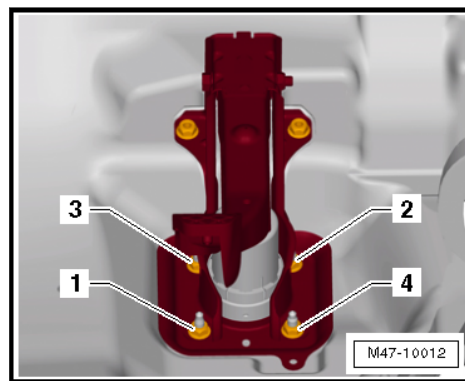
Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the nuts hand-tight.



- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal fits correctly when attaching the brake master cylinder to the brake booster.
- Clip the brake pedal to the brake booster. Refer to ➤ [page 276](#).

Follow the Tightening Sequence:



- Tighten nuts -1 through 4- in the sequence shown in the illustration.

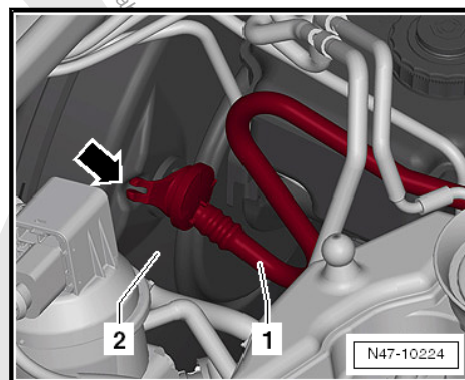
Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Bleed the brake system. Refer to ➤ [S6 system](#), page 457.

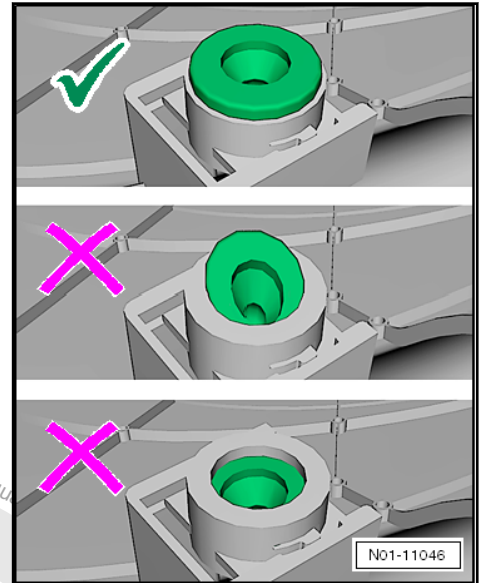
Vehicles with Manual Transmission

- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles



- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.
- Install and connect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



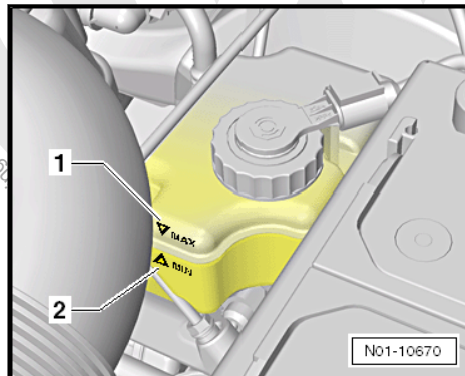
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➤ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ➤ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➤ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism or ➤ Rep. Gr. 37.



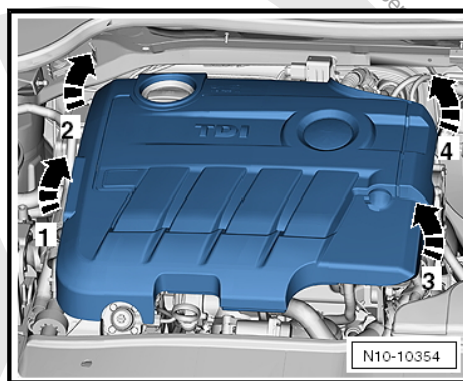
3.5.3 Brake Booster, Removing and Installing, with 4-Cylinder Diesel Engine

Special tools and workshop equipment required

- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-

Perform the Following:

Removing



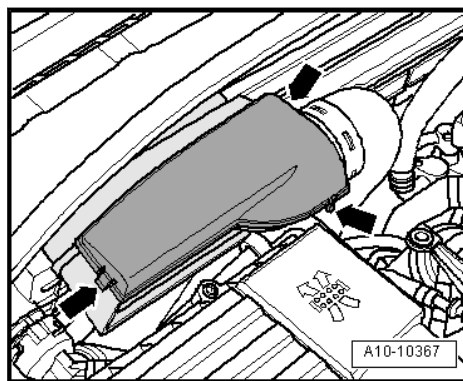
- Remove engine cover near in direction of -arrows-.
- Observe the given sequence -1 through 4-.
- Reach as far as possible under the engine cover.



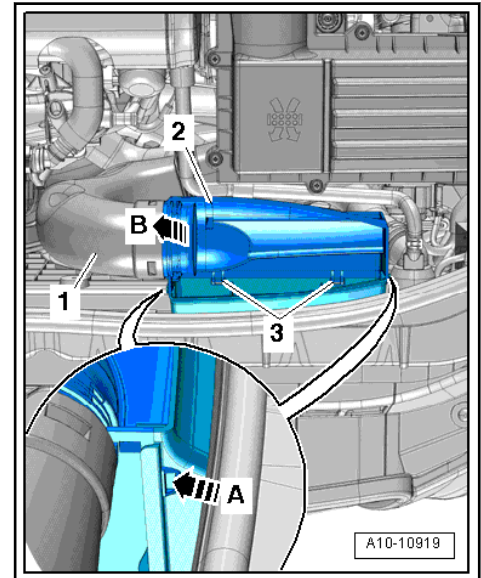
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always remove the engine cover according to the following procedure.

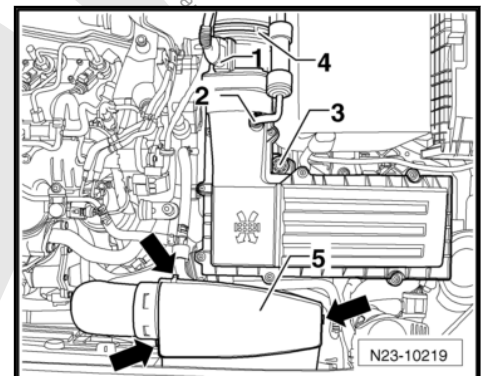
- Remove the cover for the air duct; disengage the side clips to do so -arrows-.



- Release the left and right clips in direction of -arrow A- and unclip the lower air guide -2-.



- Disengage the lower air guide from the mounts -3-.
- To do this, swing the lower air guide slightly backward.
- Disengage the air duct pipe -1- from the lower air duct in direction of -arrow B-.
- Disconnect the connector -1- from the Mass Airflow Sensor -G70- and disconnect the hose -2-.



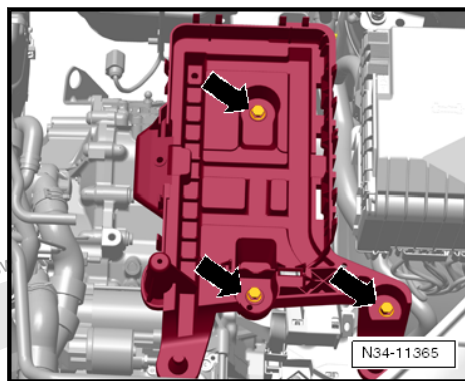
- Loosen the clamp -4- and remove the air duct hose.
- Remove the hose -3- and remove the air filter housing.
- Seal all openings using the Engine Bung Set -VAS6122-.



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.

- Remove the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.



- Remove bolts -arrows- to remove battery tray. Refer to
⇒ Electrical System; Rep. Gr. 27; Battery; Battery Tray, Re-
moving and Installing.

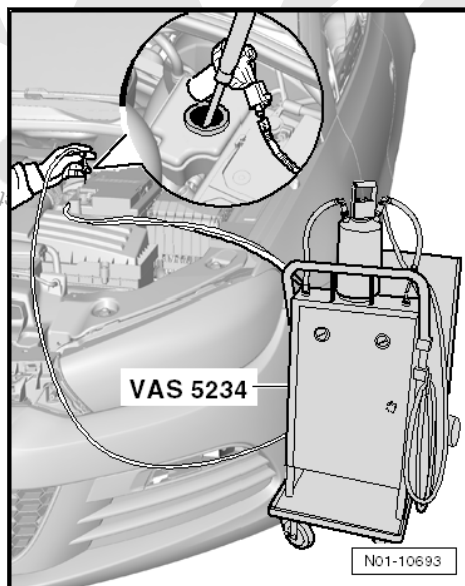


Caution

Danger of causing damage to electronic components when disconnecting the battery.

- ◆ ***Follow the steps for disconnecting the battery.***

- Place enough lint-free cloths near the engine and transmis-
sion.
- Extract as much brake fluid as possible from the brake fluid
reservoir using Brake Charger/Bleeder Unit VAS5234-.

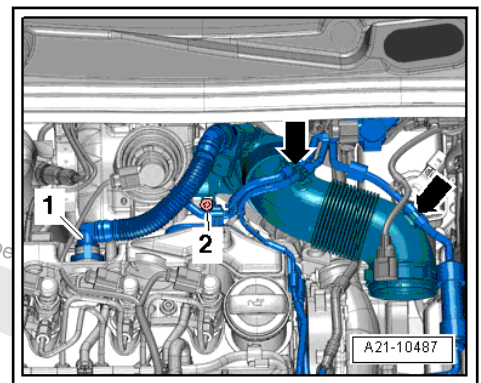




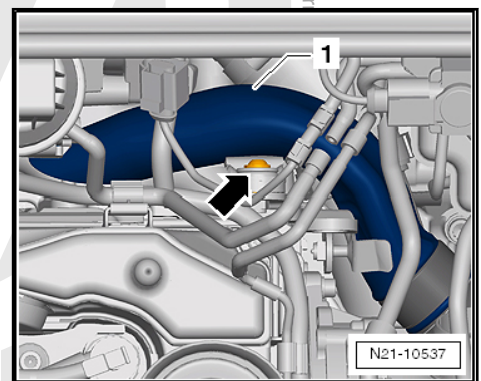
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

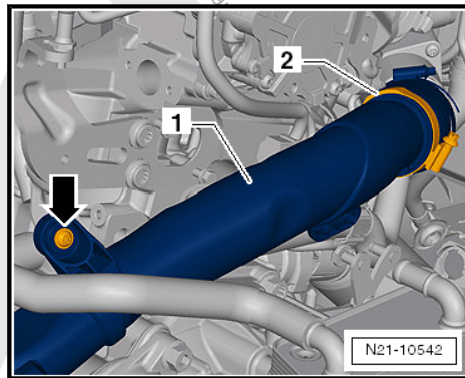
- Press the release buttons and remove the crankshaft housing ventilation hose -1- from the cylinder head cover.



- Disconnect the connector from the crankcase ventilation hose -1-.
- Free up the vacuum hoses -arrows-.
- Remove the bolt -2-.
- Turn the air guide pipe to the rear and remove it.
- If equipped, remove bolt -arrow-.



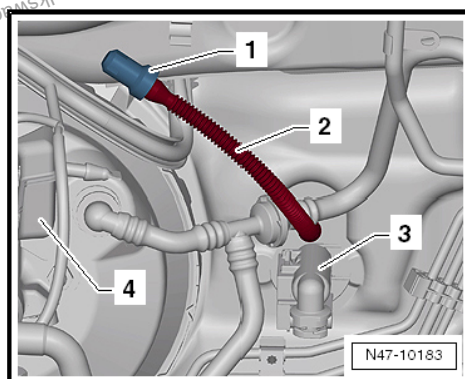
- Remove the intake tube -1- for the preheater on the bracket.
- Remove the charge air pressure pipe -1-. Refer to ➔ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components.



Vehicles with DSG® Transmission

- Remove the selector lever cable from the ball head and out of the cable bracket. Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Remove the selector lever from the selector shaft on the transmission. Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.

Vehicles with Manual Transmission



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove the selector mechanism from the transmission. Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.

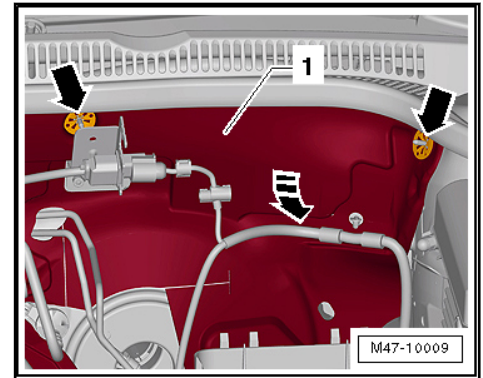


Note

It is necessary to separate the cable retainer from the selector cable prior to removing to prevent damaging the selector cable.



Continuation for All Vehicles



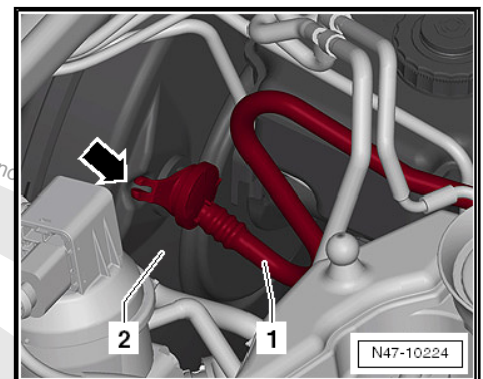
- Remove the star-shaped washers -arrows-.
- Release and remove the connector.
- Unclip the connector and wiring harness from the bulkhead.
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



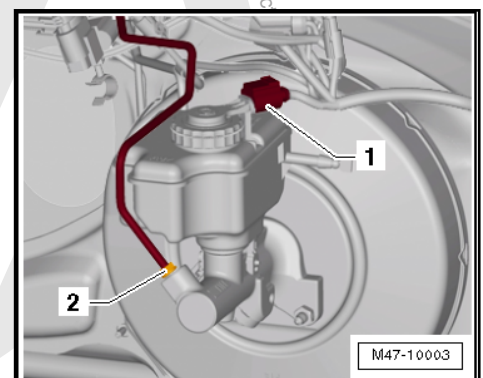
Note

It is not necessary to remove the insulation.

- Pull the vacuum line -1- out of the brake booster -2-.



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.





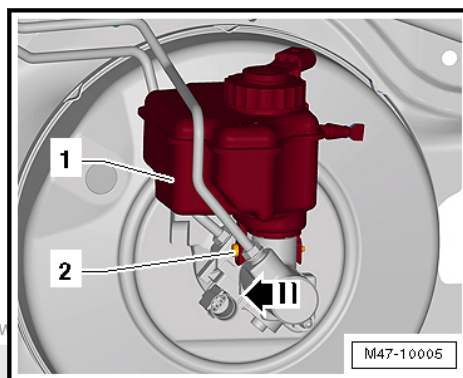
Caution

Brake lines must not be bent.

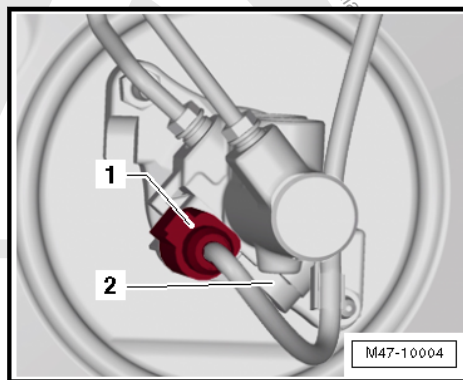
Do not confuse brake lines when connecting them.

Mark the lines in their installed position before removing them.

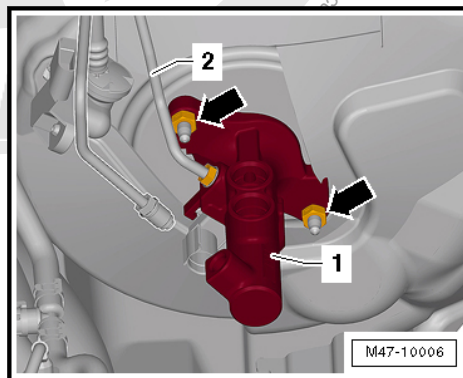
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.



- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.

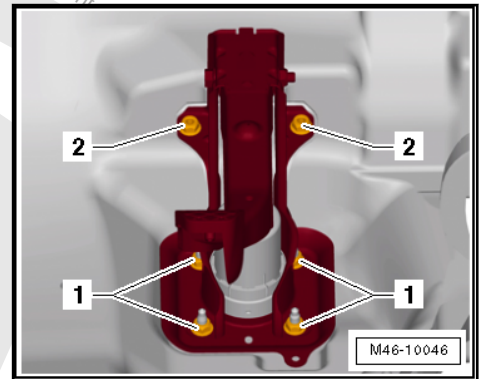


- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.





- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.
- Disconnect the brake pedal from the brake booster. Refer to [⇒ P4.3 edal, Disconnecting from Brake Booster”, page 275](#) .
- Remove the threaded connection -1- from the brake booster on the pedal bracket.



Note

It is not necessary to loosen the threaded connection -2-.

Continuation for All Vehicles

- Carefully remove the brake booster from the vehicle.

Installing



Note

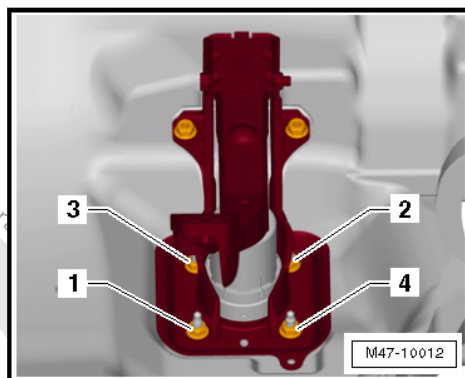
- ◆ *The brake booster is also bonded with the seal at the factory only.*
- ◆ *The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.*

Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the nuts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal fits correctly when attaching the brake master cylinder to the brake booster.
- Clip the brake pedal to the brake booster. Refer to [⇒ page 276](#) .



Follow the Tightening Sequence:



- Tighten nuts -1 through 4- in the sequence shown in the illustration.

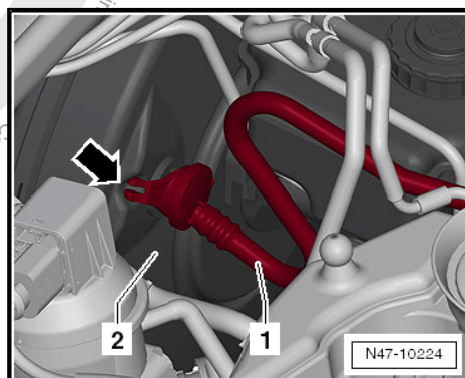
Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Bleed the brake system. Refer to [⇒ S6 ystem", page 457](#) .

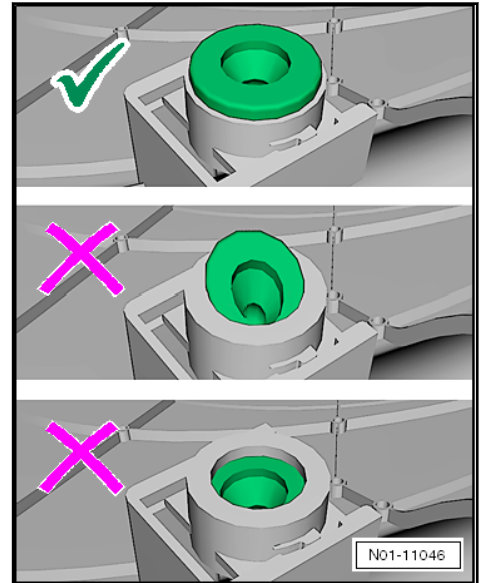
Vehicles with Manual Transmission

- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles



- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.
- Install and connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



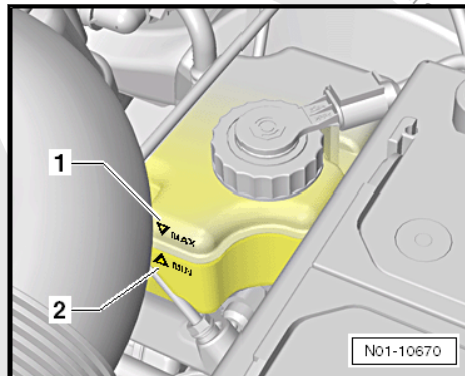
Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

- ◆ Refer to ➔ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ➔ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- ◆ Refer to ➔ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ ➔ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components
- ◆ Refer to ➔ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism or ➔ Rep. Gr. 37.



3.5.4 Brake Booster, Removing and Installing, Hybrid

Special tools and workshop equipment required

- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Engine Bung Set -VAS6122-

Perform the Following:

Removing



Note

The battery ground cable must be disconnected for the following procedure. Check if a coded radio is installed. If necessary, obtain anti-theft code beforehand.



WARNING

Follow the High-Voltage System General Warnings. Refer to ➔ Electrical System Hybrid; Rep. Gr. 93; High Voltage System General Warnings.



Caution

Follow the notes on working with high-voltage lines. Refer ➔ Electrical System Hybrid; Rep. Gr. 93; High Voltage System General Warnings.



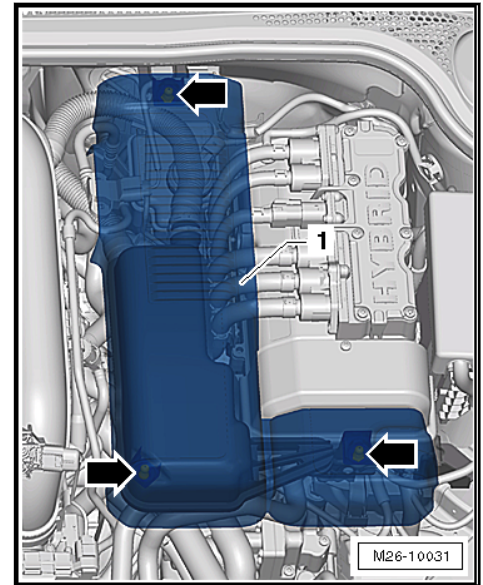
WARNING

Hybrid vehicles have a high-voltage system! Danger of electrical shock! When performing the following work, it is also necessary to work on the high-voltage system. Disable the high-voltage system now. Refer to ➔ Electrical System Hybrid; Rep. Gr. 93; High Voltage System, De-Energizing.

- Disable the high-voltage system. Refer to ➔ Electrical System Hybrid; Rep. Gr. 93; High Voltage System, De-Energizing.
- Disconnect the 12 V. Refer to ➔ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.

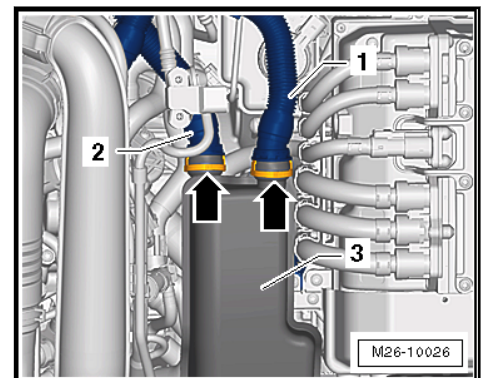


Vehicles with Engine Code CNLA

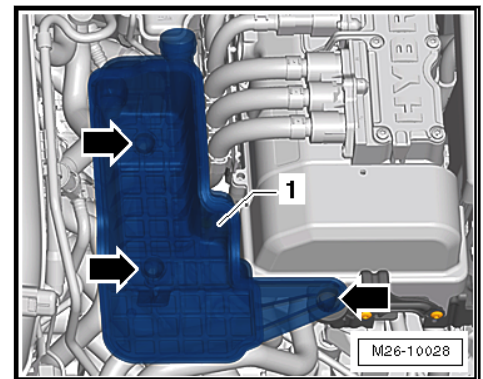


Remove the air damper cover -1- from the retainers -arrows-.

- Disconnect the air line -1 and 2- from the air damper -3-.



- Press the locking rings -arrows- together on both sides and disconnect the lines.
- Remove the air damper -1- from the rubber bushings -arrows-.



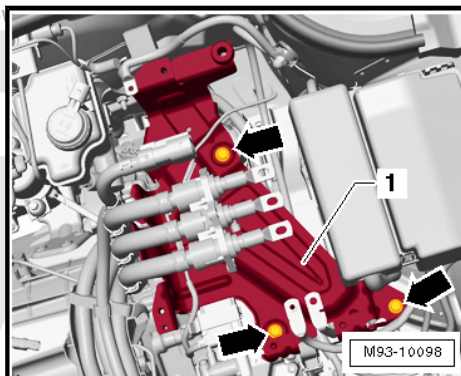
Continuation for All Vehicles

- Remove the Electric Drive Power and Control Electronics -JX1-. Refer to ➔ Electrical System Hybrid; Rep. Gr. 93;

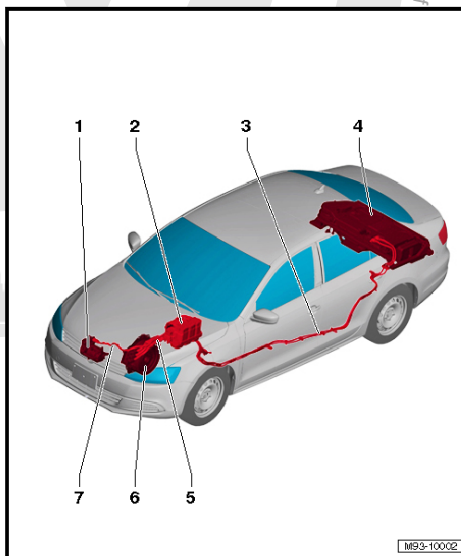


Electric Drive Power and Control Electronics; Electric Drive Output and Control Electronics, Removing and Installing.

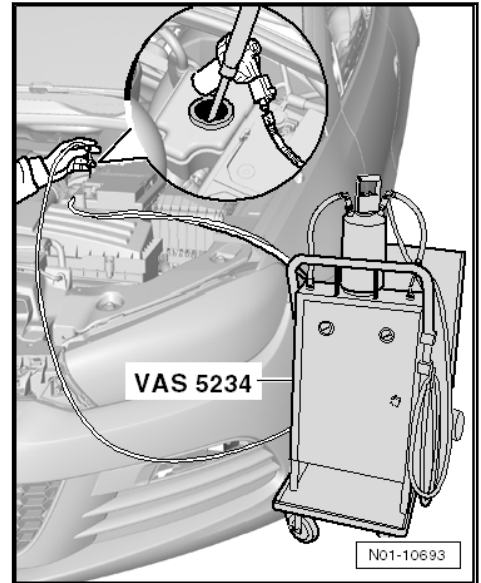
- Remove the bolts -arrows-.



- Remove the bracket -1- for the Electric Drive Power and Control Electronics -JX1-.
- Unclip the high-voltage lines -3 and 5- in the brake booster area and lay aside.



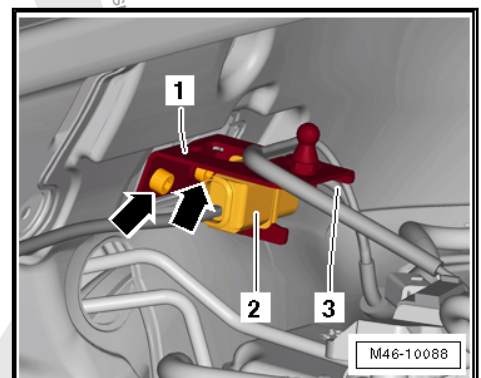
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



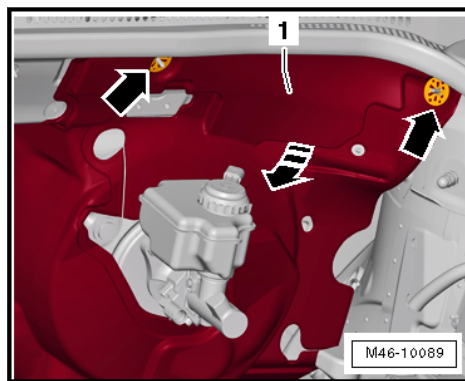
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- Remove the selector lever cable from the ball head and out of the cable bracket. Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Remove the selector lever from the selector shaft on the transmission. Refer to ➤ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- Release and disconnect the connector -2-.



- Unclip the connector on the bracket -3-.
- Remove the bolts -arrows- and the bracket -3-.
- Unclip the wiring harness on the bulkhead.
- Remove the star-shaped washers -arrows-.



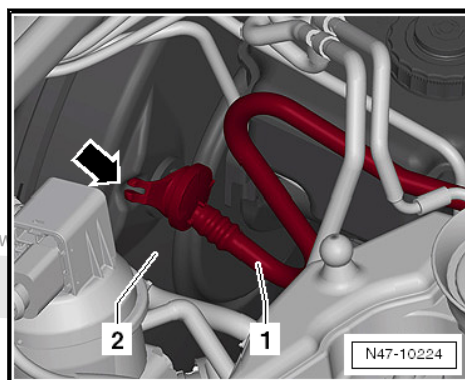
- Fold the bulkhead damper -1- forward in direction of -arrow- and guide it out.



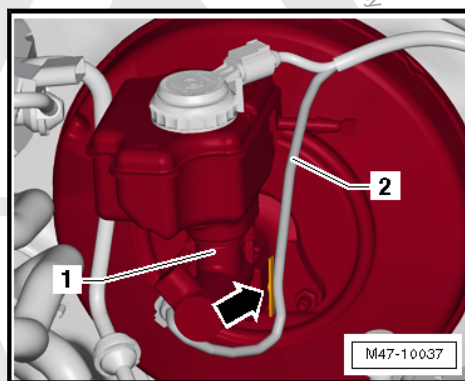
Note

It is not necessary to remove the insulation.

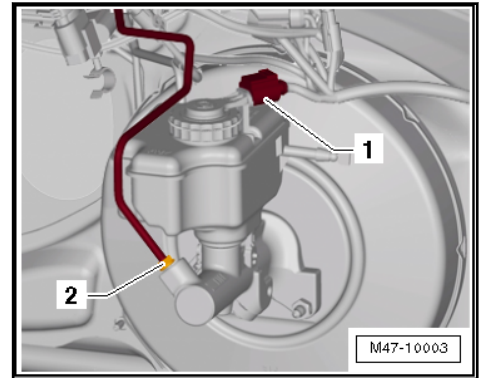
- Pull the vacuum line -1- out of the brake booster -2-.



- Unclip the wiring harness -2- on the brake master cylinder -1- -arrow-.



- Disconnect and remove the connector -1- from the Brake Fluid Level Warning Switch -F34-.



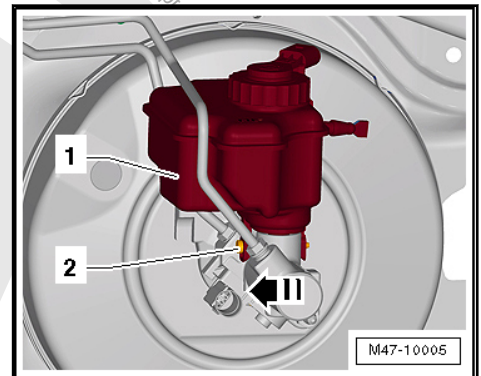
Caution

Brake lines must not be bent.

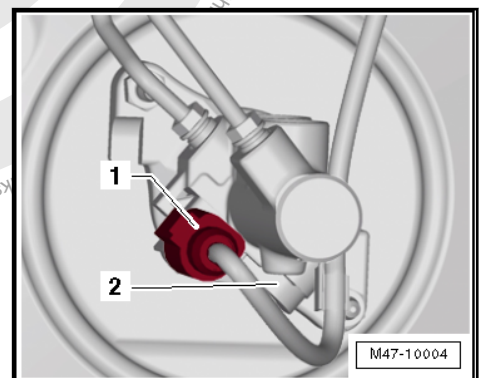
Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

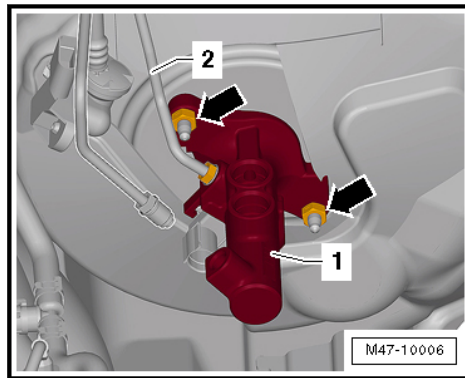
- Remove the brake line pipe fitting -2-.
- Seal the brake line with Plugs -1H0 698 311 A-.
- Remove the fastening pin -2- in direction of -arrow-.



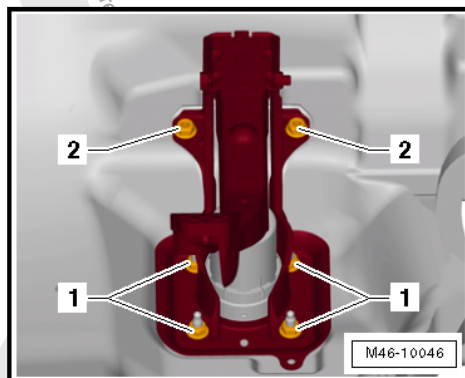
- Carefully remove the brake fluid reservoir -1- from the plugs.
- Unlock and disconnect the connector -1- from the Brake Lamp Switch -F- -2-.



- Unclip the wiring bracket from the brake master cylinder.
- Remove the brake line tube fitting -2- from the brake master cylinder -1-.



- Seal the brake line with Plugs -1H0 698 311 A-.
- Unscrew the threaded connection -arrows- on the brake master cylinder -1-.
- Carefully take the brake master cylinder out of the brake booster.
- Disconnect the brake pedal from the brake booster. Refer to [⇒ P4.3 edal, Disconnecting from Brake Booster”, page 275](#) .
- Remove the threaded connection -1- from the brake booster on the pedal bracket.



Note

It is not necessary to loosen the threaded connection -2-.

Continuation for All Vehicles:

- Carefully remove the brake booster from the vehicle.

Installing



Note

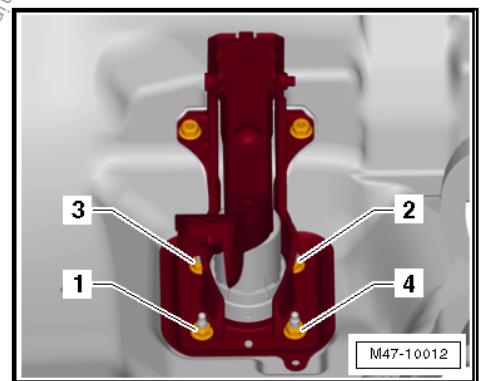
- ◆ The brake booster is also bonded with the seal at the factory only.
- ◆ The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.

Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the nuts hand-tight.

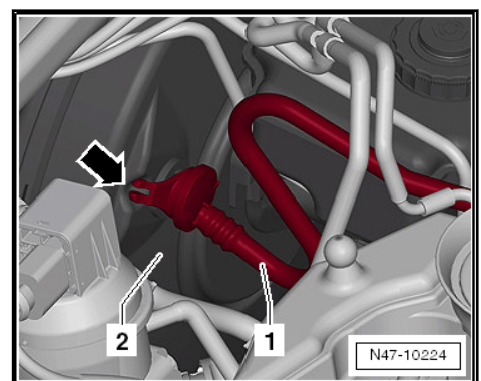


- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal -item 5- ➤ [Item 5 \(page 305\)](#) fits correctly when assembling the brake master cylinder with the brake booster.
- Make sure the sealing plugs -item 13- ➤ [Item 13 \(page 306\)](#) are seated correctly in the brake master cylinder.
- Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.
- Clip the brake pedal to the brake booster. Refer to ➤ [page 276](#) .
- Tighten nuts -1- through -4- in the sequence shown in the illustration.



Coat the plugs with brake fluid before pressing the brake fluid reservoir into the brake master cylinder.

- Bleed the brake system. Refer to ➤ [S6 ystem", page 457](#) .
- Fill the coolant. Refer to ➤ Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling.
- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.

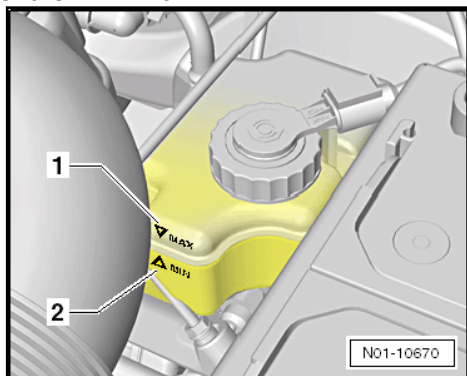


- Install and connect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specifications

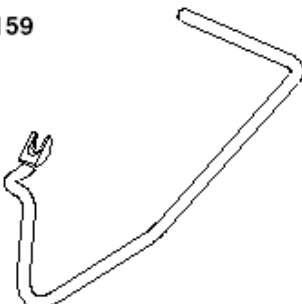
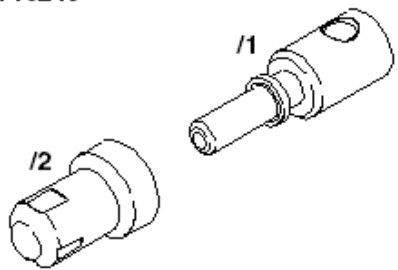

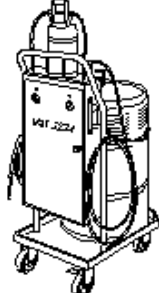
- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ⇒ Rep. Gr. 34; Shift Mechanism, Servicing; Overview - Selector Mechanism.
- ◆ Refer to ⇒ Rep. Gr. 26; Secondary Air System; Overview - Secondary Air Injection System.
- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Removing and Installing.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; Component Location Overview - High Voltage Components.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; Electric Drive Power and Control Electronics; Component Location Overview - Electric Drive Power and Control Electronics.
- ◆ Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage Cables; Component Location Overview - High Voltage Cables.

3.5.5 Brake Booster, Removing and Installing, RHD with 4-Cylinder Gasoline Engine

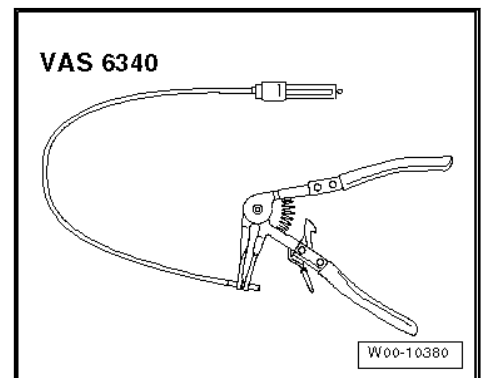
NOT FOR NORTH AMERICAN MARKET



Special tools and workshop equipment required

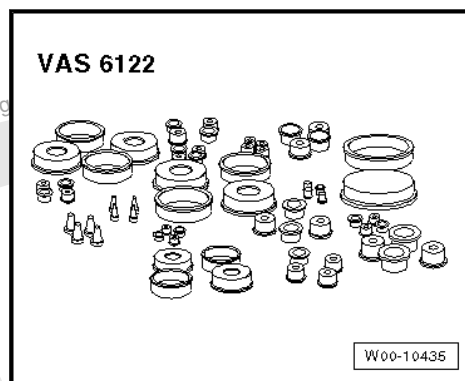
<p>T10159</p> 	<p>T10249</p> 
<p>V.A.G 1331</p> 	<p>VAS 5234</p> 
	<p>W47-10005</p>

- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plugs -1H0 698 311 A-
- ◆ Hose Clip Pliers -VAS6340-

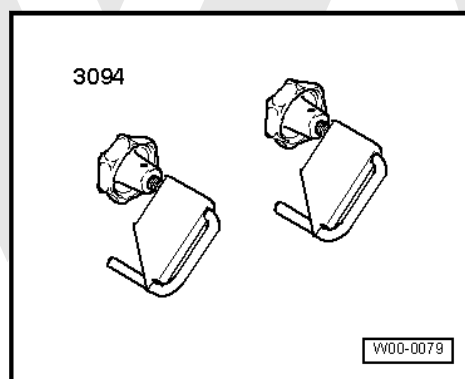




◆ Engine Bung Set -VAS6122-

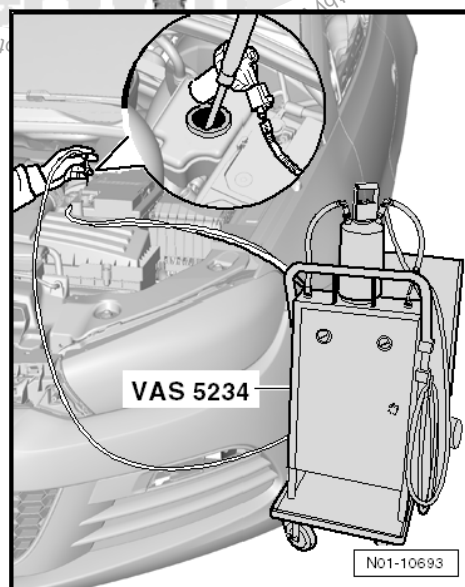


◆ Hose Clamps - Up To 25 mm -3094-



Perform the following:

Removing



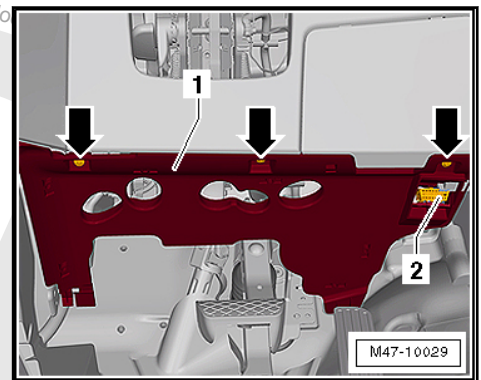
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



WARNING

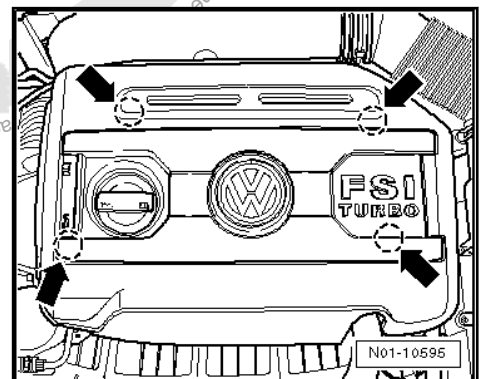
- ◆ *Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.*
- ◆ *Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*
- ◆ *Extracted brake fluid cannot be used again.*
- ◆ *Follow all disposal regulations.*

- If equipped, remove the instrument panel trim panel -1- in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.



- To do this, remove the bolts -arrows-.
- Remove diagnostic plug -2-.
- Remove the footwell vent on the driver side. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.
- Disconnect the brake pedal from the brake booster. Refer to ⇒ [P4.3 edal, Disconnecting from Brake Booster](#), page 275.

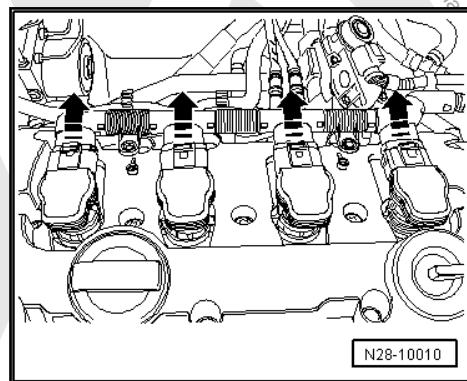
Vehicles with 2.0L gasoline engine and turbocharger



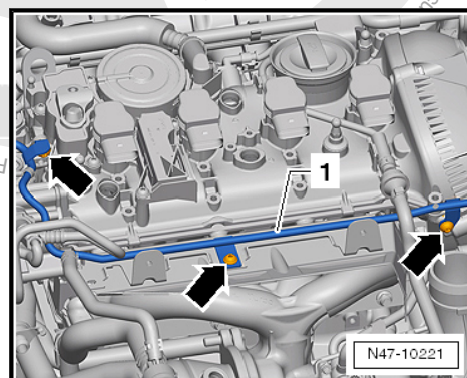
- Remove the engine cover upward from the attaching points -arrows-. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Remove the noise insulation or impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.



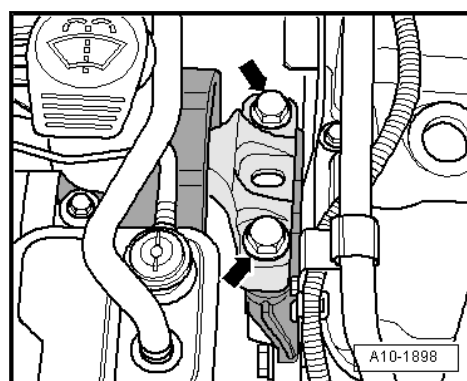
- Remove the turbocharger. Refer to ➔ Rep. Gr. 21; Turbocharger; Turbocharger, Removing and Installing.
- Hold the engine in its installed position. Refer to ➔ Rep. Gr. 10; Subframe Mount; Engine, Supporting in Installation Position.
- Release the connector and remove all at the same time in the -direction of the arrow-.



- Move the wiring harness to the side.
- Remove the coolant pipe -1- from the mounting points -arrows-.

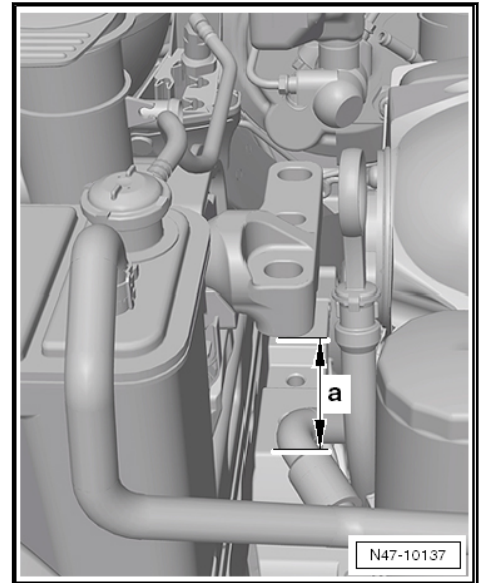


- Move the coolant pipe -1- to the side.
- Remove the subframe mount bolts -arrows- from the engine.



- Drain the engine using the spindles and push it as far forward as possible.

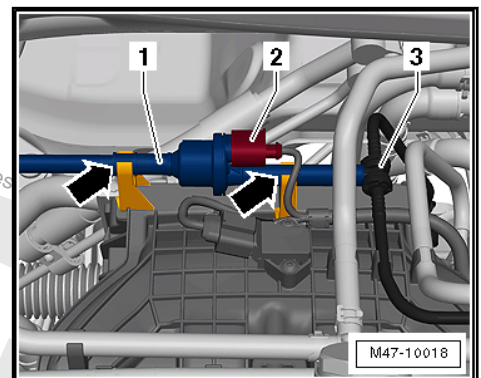
On the engine-side the distance -a- between the engine support and the engine mount must be 4.0 mm.



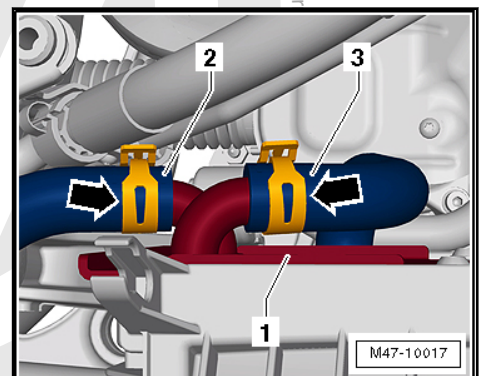
i Note

- ◆ *Make sure there is drive axle clearance to the subframe.*
- ◆ *To prevent damage the drive axles must not lay on the subframe.*

Vehicles with 1.4L 90 kW gasoline engine with turbocharger

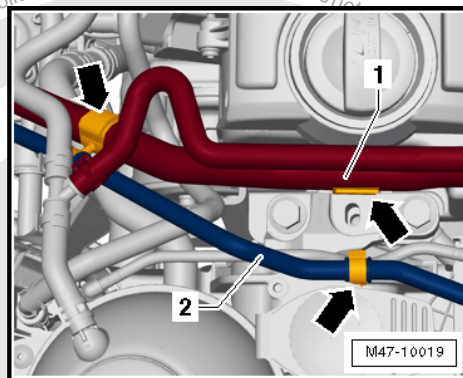


- Disengage connector -2- at wire -1- and remove.
- Unclip wire -1- at intake manifold from brackets -arrows-.
- Remove wire -1- at coupling point -3-.
- Remove coolant hose -2- at charge air cooler -1-.

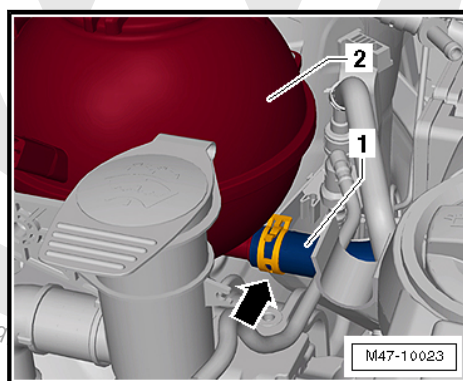




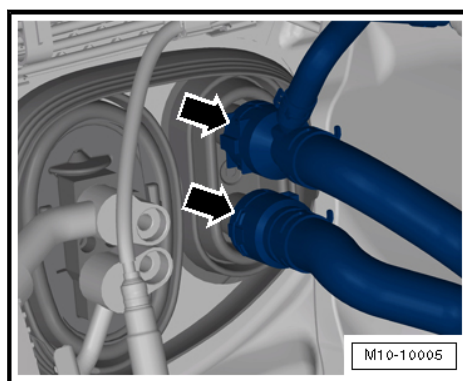
- To do this, open clamp -arrow-.
- Unclip wire -2- and coolant hoses -1- from brackets -arrows-.



- Set wire -2- and coolant hose -1- aside.
- Remove coolant hose -1- at coolant reservoir -2-.



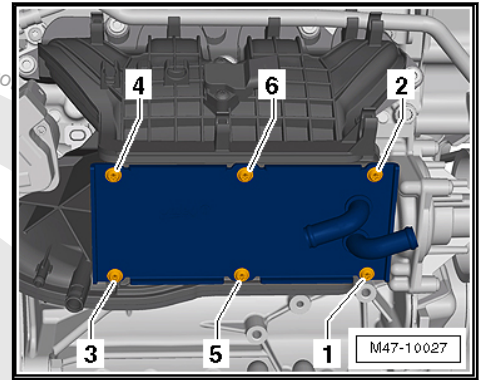
- To do this, open clamp -arrow-.
- Remove the coolant hoses -arrows- from the heater core.



- Move the coolant hoses to the side.
- Remove charge air cooler in sequence shown -1- through -6-.

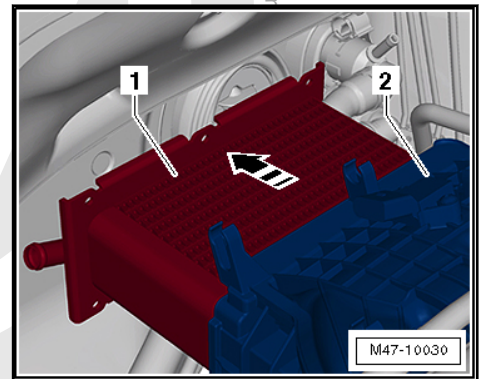


- Pull charge air cooler -1- in -direction of arrow- from the intake manifold -2-.

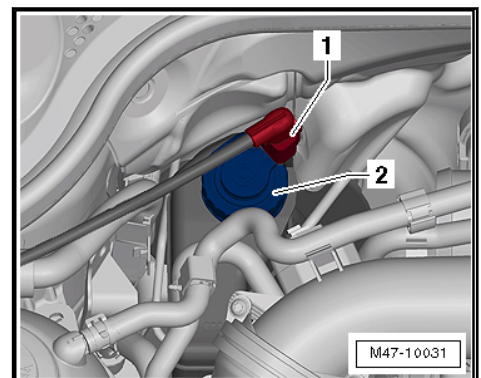


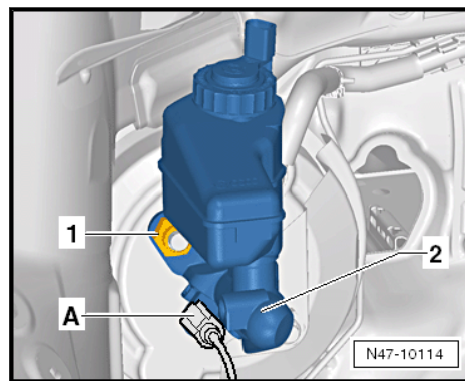
- Remove charge air cooler -1- to the bulkhead.

Continuation for All Vehicles:

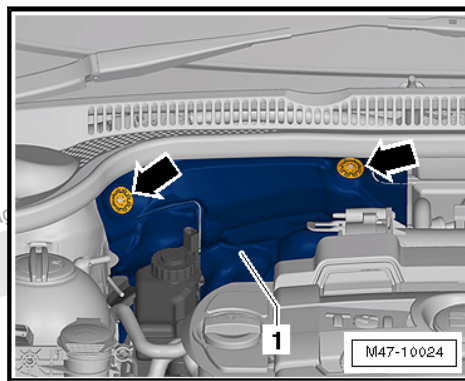


- Disconnect the connector -1- from the Brake Fluid Level Warning Switch -F34- -2-.
- Disconnect and remove the connector -A- from the Brake Lamp Switch -F-.



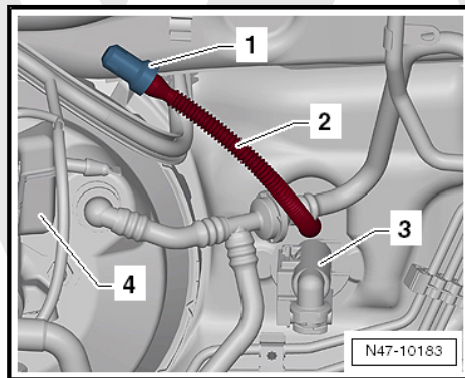


- Remove securing plate -arrows- and fold the noise insulation -1- forward.



Vehicles with Manual Transmission:

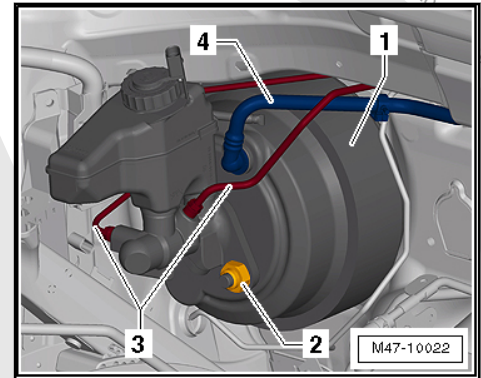
- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.



- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.



Continuation for All Vehicles:



- Remove brake lines -3- on the master brake cylinder -1-.



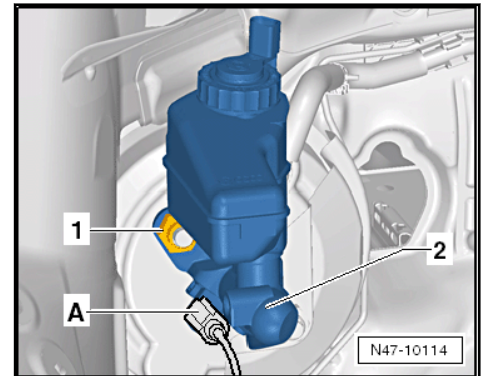
Caution

Brake lines must not be bent.

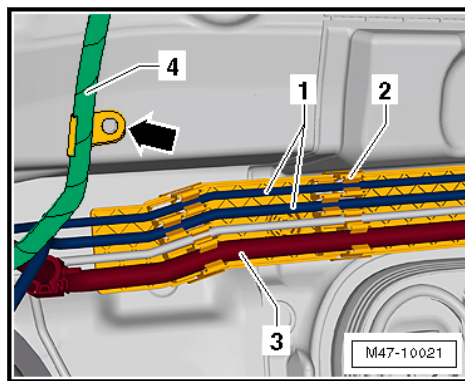
Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

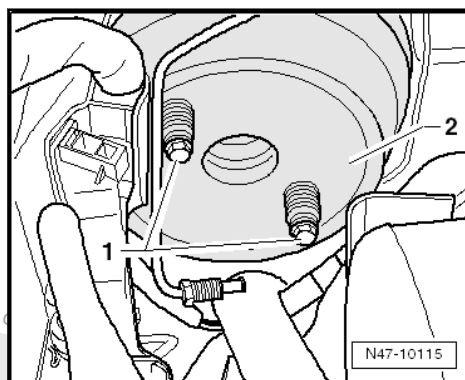
- Seal off the brake lines with the plugs from the Repair Kit -1H0 698 311 A-.
- Remove the nut -2-.
- Pull the vacuum line -4- out of the brake booster -1-.
- Remove the heat shield, if equipped.
- Remove the nut -1-.



- Carefully take the brake master cylinder -2- out of the brake booster.
- Unclip brake lines -1- from the bracket -2-.



- Unclip vacuum line -3- from the bracket -2-.
- Unclip the wiring harness -4- on the bulkhead -arrow-.
- Remove the screws -1- from the brake booster -2-.



- Carefully remove the brake booster -2- from the vehicle.
- Carefully remove the brake booster from the vehicle.

Installing

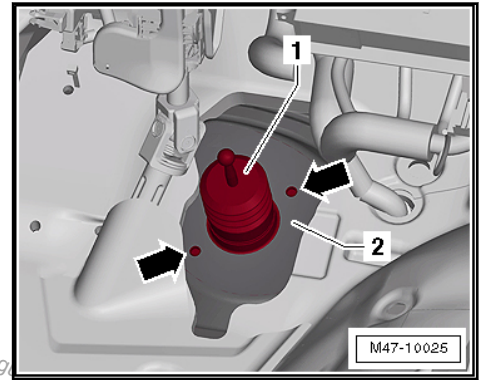


Note

- ◆ *The brake booster is also bonded with the seal at the factory only.*
- ◆ *The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.*

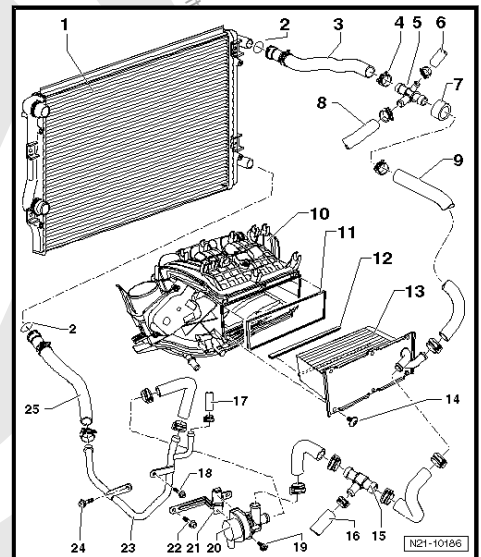
Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the bolts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure that the brake booster -1- sits correctly in the support openings -arrows- on the bulkhead -2-.

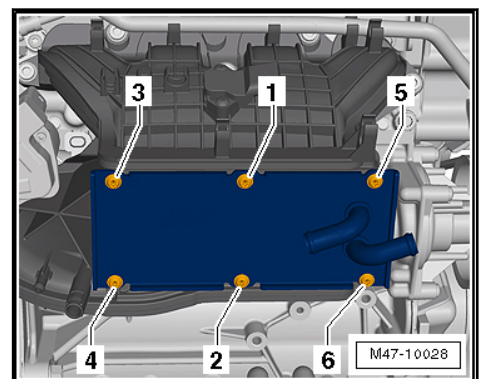


- Make sure the seal fits correctly when attaching the master brake cylinder to the brake booster -item 13- ➔ [Item 13](#) (page 308) .

Vehicles with 1.4L 90 kW gasoline engine with turbocharger



- When installing, check that the charge air cooler -13- seal -11- fits correctly.
- Secure charge air cooler in sequence shown -1- through -6-.



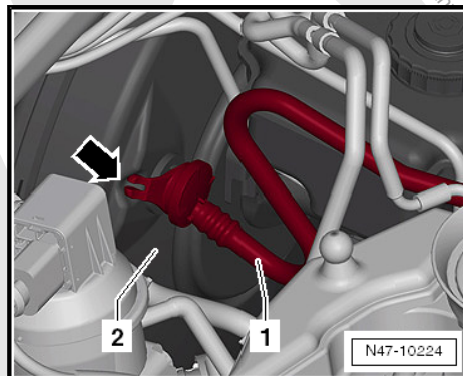
- Secure charge air cooler in sequence shown -1- through -6-.
- Clip the brake pedal to the brake booster. Refer to ➔ [page 276](#) .
- Bleed the brake system. Refer to ➔ [S6 ystem", page 457](#) .
- Check the coolant level. Refer to ➔ Rep. Gr. 19; Coolant System/Coolant; Coolant, Draining and Filling.



Vehicles with Manual Transmission:

- Bleed the clutch. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles:

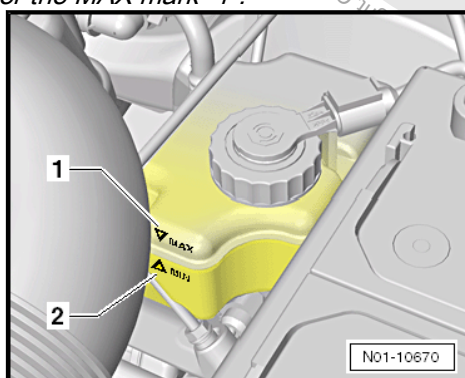


- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



Tightening Specification

- ◆ Refer to ⇒ [-3.1 Brake Booster/Brake Master Cylinder](#)”, page [304](#)
- ◆ Refer to ⇒ [-4.1 Brake Pedal](#)”, page [258](#)
- ◆ Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview - Charge Air Cooler Components.
- ◆ Refer to ⇒ Rep. Gr. 19; Coolant System/Coolant; Connection Diagram - Coolant Hoses.
- ◆ Refer to ⇒ Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.
- ◆ Refer to ⇒ Rep. Gr. 21; Turbocharger; Turbocharger, Removing and Installing
- ◆ Refer to ⇒ Rep. Gr. 10; Subframe Mount; Overview - Subframe Mount.
- ◆ Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation

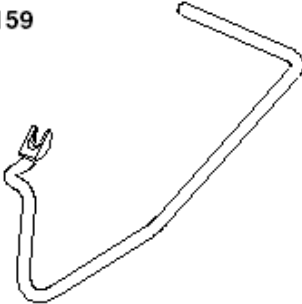
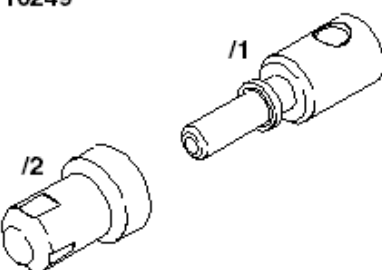




- ◆ Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.

3.5.6 Brake Booster, Removing and Installing, RHD with 4-Cylinder Diesel Engine

NOT FOR NORTH AMERICAN MARKET

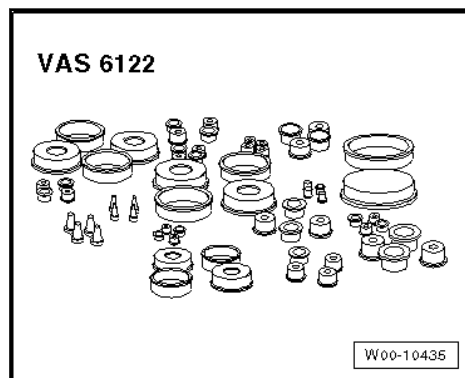
Special tools and workshop equipment required

<p>T10159</p> 	<p>T10249</p> 
<p>V.A.G 1331</p> 	<p>VAS 5234</p> 
	<p>W47-10005</p>

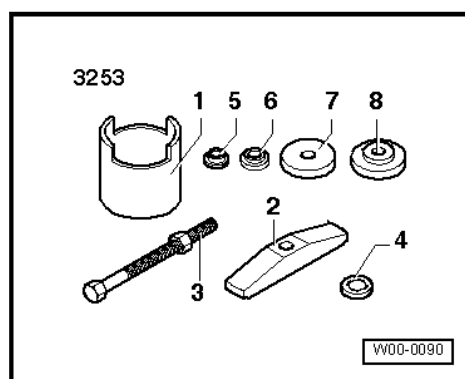
- ◆ Release Tool - Brake Servo -T10159A-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-



- ◆ Plugs -1H0 698 311 A-
- ◆ Engine Bung Set -VAS6122-

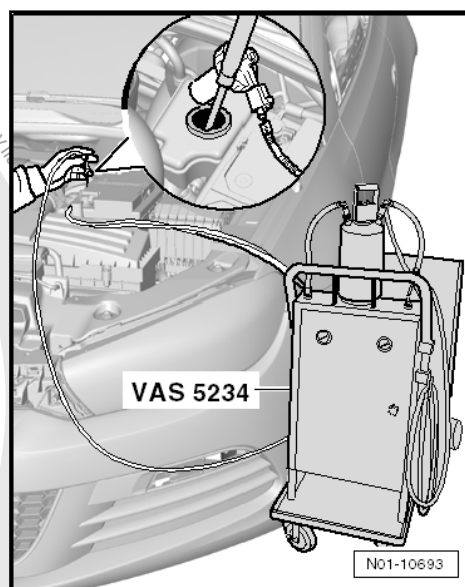


- ◆ Rear Wheel Bearing Kit - Piece 5 -3253/5-



- ◆ M10 x 35 Collar Bolt

Removing



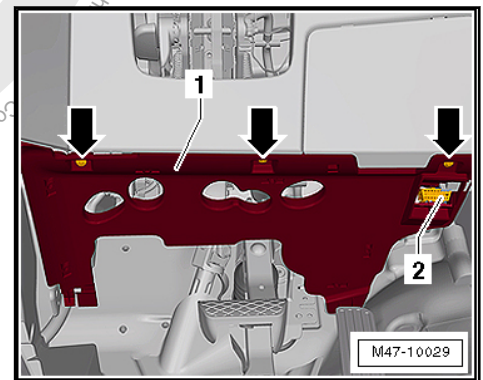
- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir using Brake Charger/Bleeder Unit -VAS5234-.



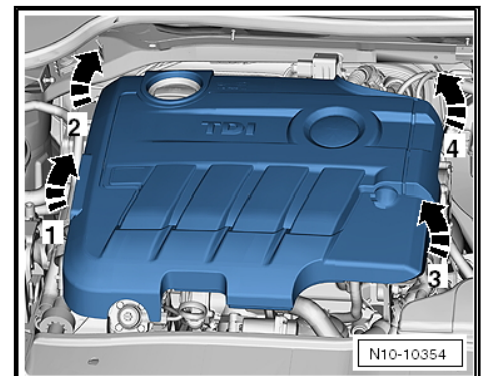
WARNING

- ◆ **Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Mineral oil damages the brake system plugs and boots.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid by mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Extracted brake fluid cannot be used again.**
- ◆ **Follow all disposal regulations.**

- If equipped, remove the instrument panel trim panel -1- in the driver footwell. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel.



- To do this, remove the bolts -arrows-.
- Remove diagnostic plug -2-.
- Remove the footwell vent on the driver side. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.
- Disconnect the brake pedal from the brake booster. Refer to ⇒ [P4.3 edal, Disconnecting from Brake Booster](#), page 275 .
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Remove engine cover near -arrows-.



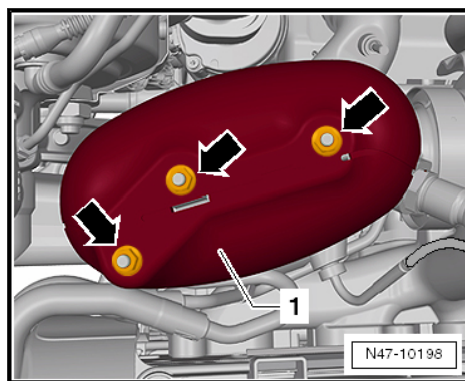
- Observe the given sequence -1- through -4-.
- Reach as far as possible under the engine cover.



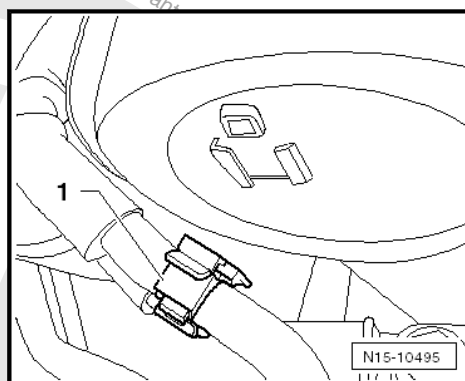
Caution

The bracket for attaching the engine cover to the cylinder head could break if removed incorrectly. Always remove the engine cover according to the following procedure.

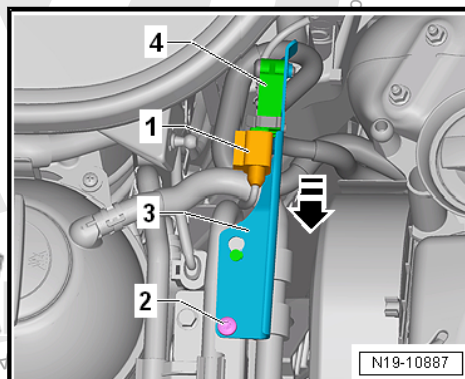
- Remove the nuts -arrows- and then remove the heat shield -1- from the diesel particulate filter.



- Release and remove the bracket -1- from the toothed belt guard.



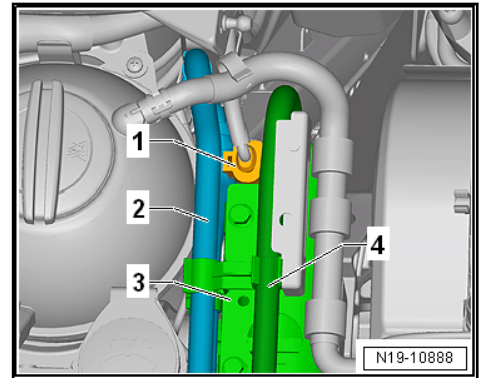
Vehicles with 2.0L diesel engines



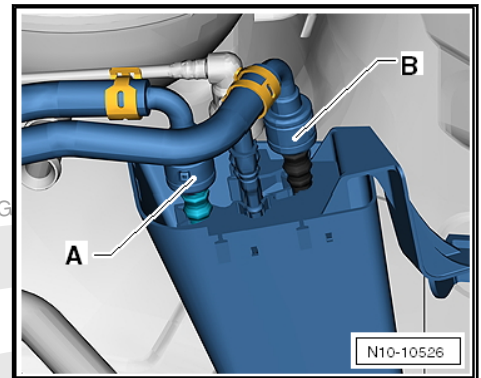
- Disconnect the connector -1- from the Oil Pressure Switch -F-.
- Remove the bolt -2-.
- Push the bracket -3- for the Differential Pressure Sensor -G505- in the -direction of the arrow- from the guide.
- Move the bracket -3- with the lines still attached to the side.



- Release and disconnect the connector -1-.



- Unclip the fuel lines -2- from the bracket -3-.
- Unclip the washer fluid hose -4- from the bracket -3-.
- Open the couplings -A- and -B- and remove the fuel lines. Open the couplings. Refer to ⇒ Rep. Gr. 20; Connector Couplings; Connector Couplings, Separating.



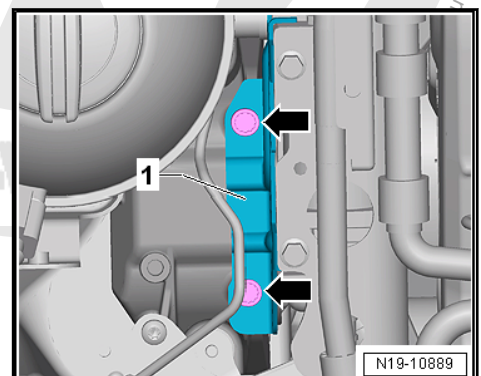
WARNING

The fuel line is under pressure.

Fuel poses a risk of injury to the eyes and skin.

Wear protective eyewear and protective clothing to avoid injury and contact with skin. Place a cleaning cloth around the connection point before loosening hose connections. Carefully open the connection point to release the pressure.

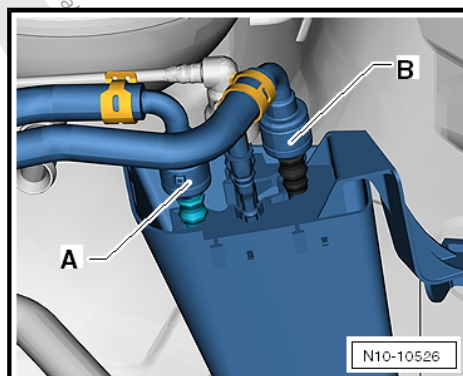
- Move the fuel lines to the side.
- Remove the bolts -arrows-.





- Move the Auxiliary Fuel Pump -V393- or Fuel Pump 2 - V277- -1- with the lines still attached to the side.

Vehicles with 1.6L diesel engines



- Open the couplings -A- and -B- and remove the fuel lines.
Open the couplings. Refer to ⇒ Rep. Gr. 20; Connector Couplings; Connector Couplings, Separating.



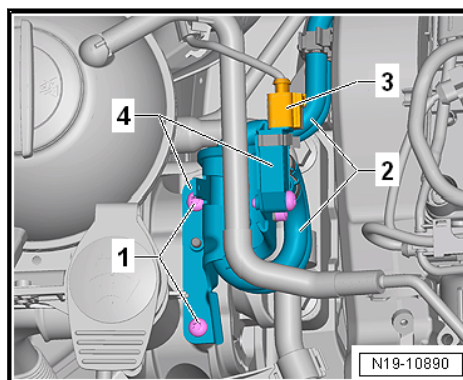
WARNING

The fuel line is under pressure.

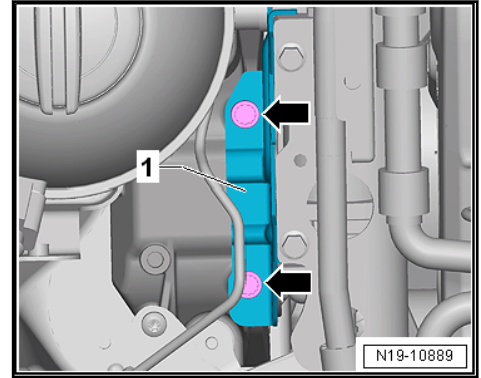
Fuel poses a risk of injury to the eyes and skin.

Wear protective eyewear and protective clothing to avoid injury and contact with skin. Place a cleaning cloth around the connection point before loosening hose connections. Carefully open the connection point to release the pressure.

- Unclip and free up the fuel lines.
- Move the fuel lines to the side.
- Disconnect and remove the connector -3- from the Differential Pressure Sensor -G505- -4-.

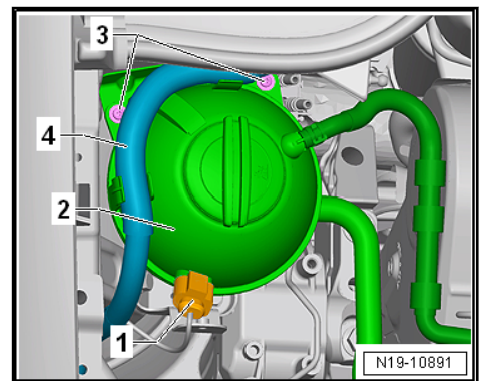


- Unclip the hoses -2- from the retainer.
- Remove the bolts -1-.
- Set the Differential Pressure Sensor -G505- -4- with lines attached to the side.
- Move the fuel lines to the side.
- Remove the bolts -arrows-.

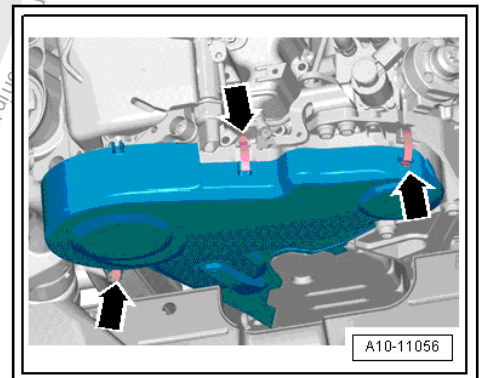


- Move the Auxiliary Fuel Pump -V393- or Fuel Pump 2 - V277- -1- with the lines still attached to the side.

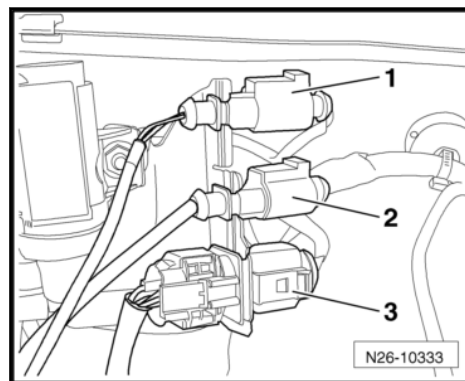
Continuation for All Vehicles



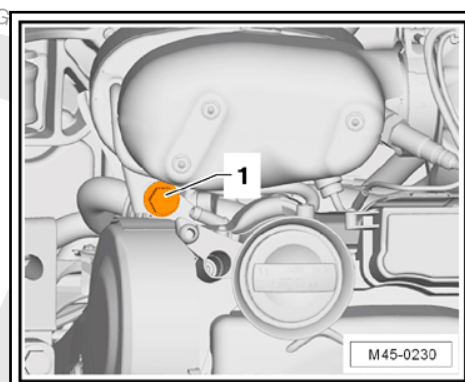
- Release and remove the connector -1- from the coolant expansion tank -2-.
- Unclip the wire -4- from the coolant expansion tank -2- and set aside.
- Remove the bolts -3- and the coolant expansion tank -2-.
- Move the coolant expansion tank upward and set aside.
- Open the clips -arrows- and remove the upper toothed belt cover.



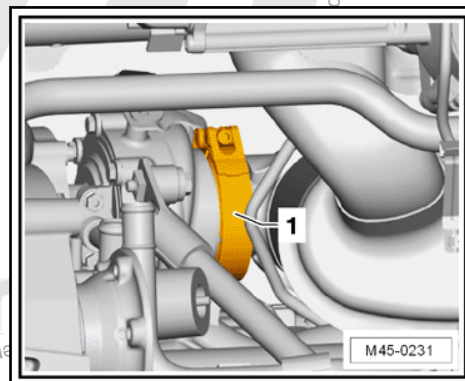
- Release and remove connectors -1- through -3-.



- Guide the wires out of the brackets.
- Remove the particulate filter bracket bolts -1-.



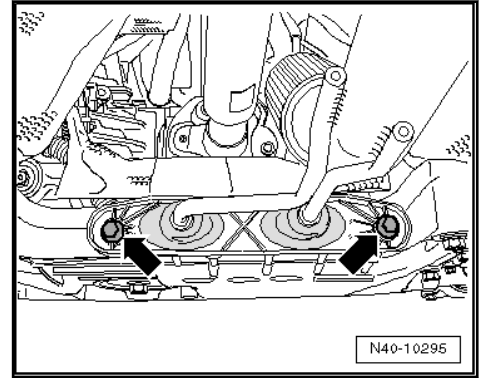
- Raise the vehicle.
- Loosen the clamp 1- for the turbocharger/particulate filter connection and remove it.



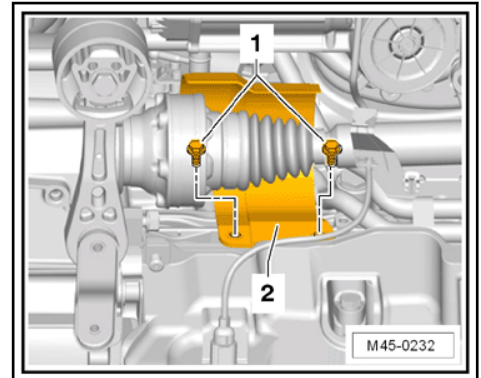
Note

The illustration shows the clamp bolt -1- from underneath. This can also be installed from above in some cases.

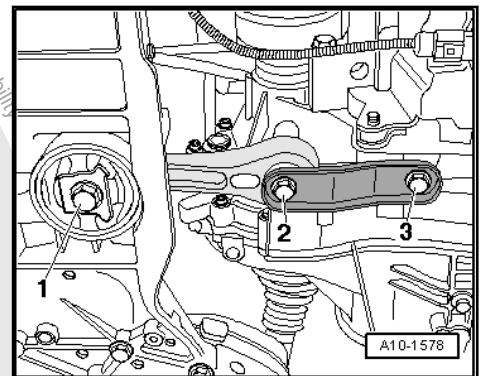
- Disconnect the exhaust system. Refer to ⇒ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Muffler.
- Remove the exhaust system bracket from the subframe -arrows-.



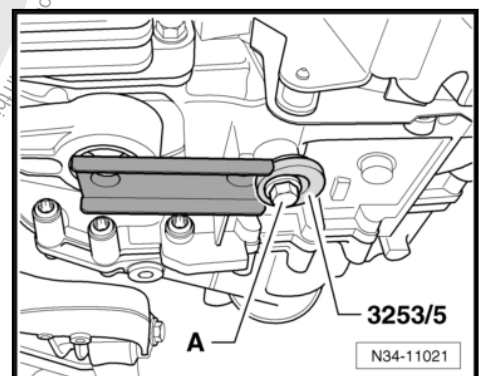
- Remove the bolts -1- and remove the drive shaft cover-2-.



- Remove the right drive axle from the flange, lay it down and secure it. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axles, Removing and Installing.
- Remove the bolts -2- and -3- from the pendulum support.



Push the engine forward and support as shown.

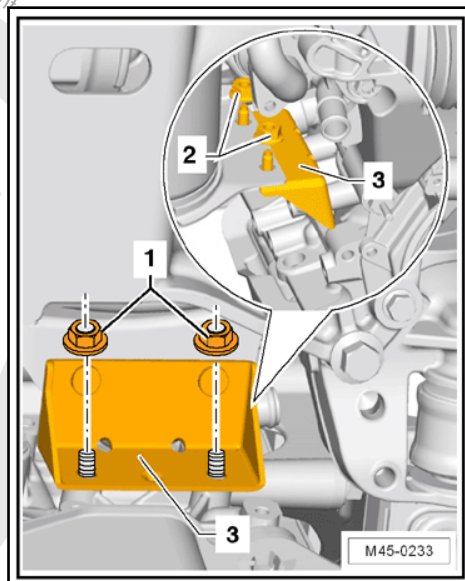




A - M10 x 35 Collar Bolt

3253/5 - Bearing Installer - Rear Wheel Bearing Kit 3253-

- Remove the nuts -1-.



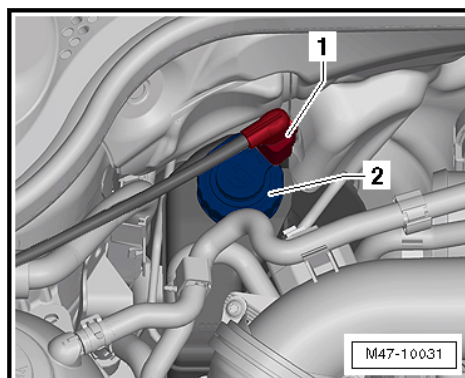
- Remove the nuts -2- using the Wrench - Sw13 -T10384-.
- Remove bracket for particulate filter -3-.
- Seal all openings using the Engine Bung Set -VAS6122-.
- Lower the particulate filter just enough so that it touches the steering gear.



Note

Pay attention to the Exhaust Gas Temperature Sensor and the Heated Oxygen Sensor when lowering onto the cables in order to avoid any damage.

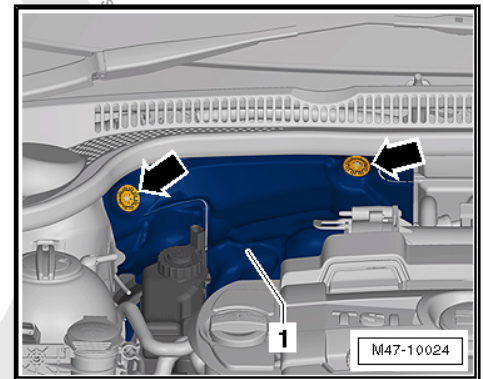
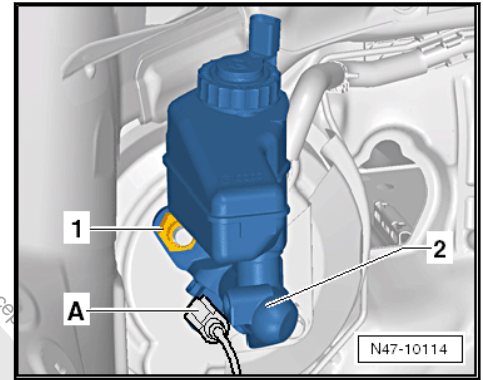
- Disconnect the connector -1- from the Brake Fluid Level Warning Switch -F34- -2-.



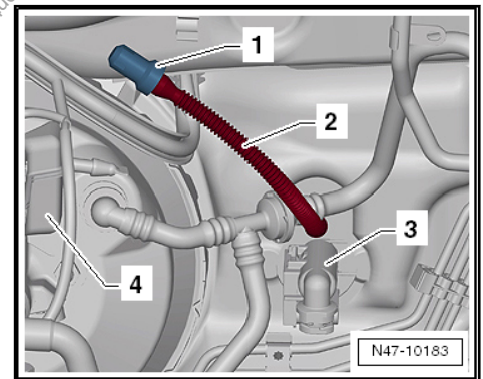
- Disconnect and remove the connector -A- from the Brake Lamp Switch -F-.



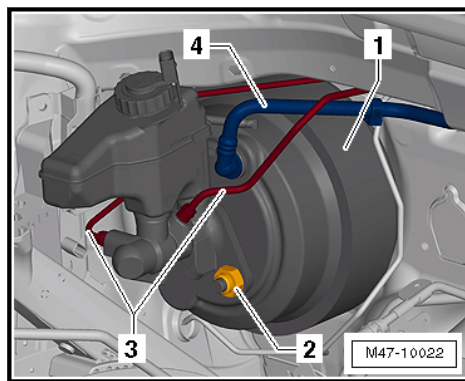
- Remove securing plate -arrows- and fold the noise insulation -1- forward.



Vehicles with Manual Transmission:



- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the supply hose -2- for the clutch master cylinder -3- using the Sealing Tool -T10249- -1- or Engine Bung Set -VAS6122-.
- Tie up the return hose -2-.
- Remove brake lines -3- on the master brake cylinder -1-.



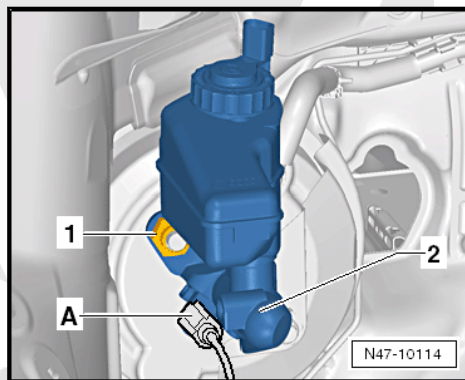
Caution

Brake lines must not be bent.

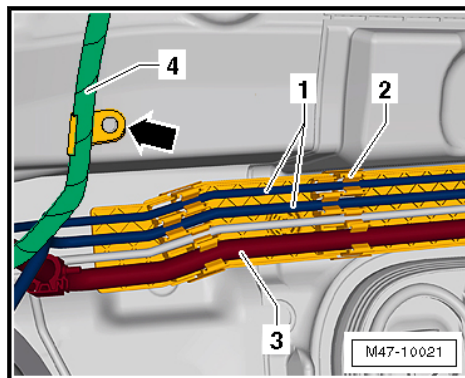
Do not confuse the brake lines when connecting them.

Mark the lines in their installed position before removing them.

- Seal off the brake lines with the plugs from the Repair Kit -1H0 698 311 A-.
- Remove the nut -2-.
- Pull the vacuum line -4- out of the brake booster -1-.
- Remove the heat shield, if equipped.
- Remove the nut -1-.

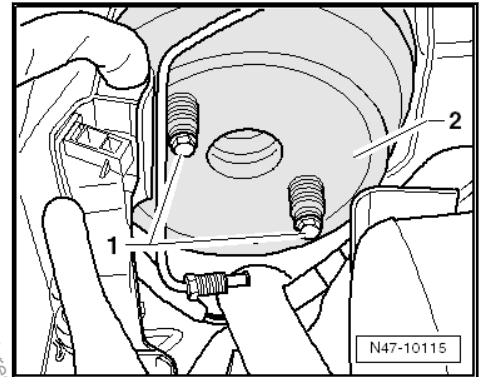


- Carefully take the brake master cylinder -2- out of the brake booster.
- Unclip brake lines -1- from the bracket -2-.





- Unclip vacuum line -3- from the bracket -2-.
- Unclip the wiring harness -4- on the bulkhead -arrow-.
- Remove the screws -1- from the brake booster -2-.



- Carefully remove the brake booster -2- from the vehicle.
- Carefully remove the brake booster from the vehicle.

Installing

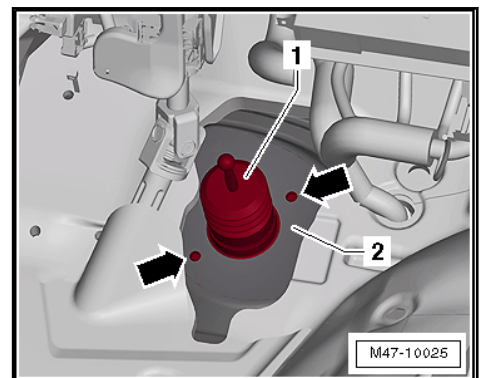


Note

- ◆ The brake booster is also bonded with the seal at the factory only.
- ◆ The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.

Install in reverse order of removal. Note the following:

- Carefully install the brake booster and tighten the bolts hand-tight.
- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure that the brake booster -1- sits correctly in the support openings -arrows- on the bulkhead -2-.



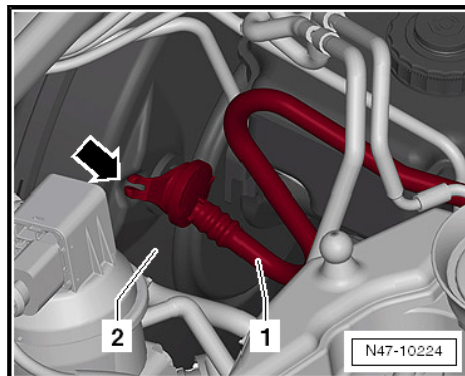
- Make sure the seal fits correctly when attaching the master brake cylinder to the brake booster -item 13- ➔ [Item 13](#) (page 308) .
- Clip the brake pedal to the brake booster. Refer to ➔ [page 276](#) .
- Bleed the brake system. Refer to ➔ [S6 ystem", page 457](#) .



Vehicles with Manual Transmission:

- Bleed the clutch. Refer to ➤ Rep. Gr. 30; Clutch Mechanism, Servicing; Clutch Mechanism, Bleeding.

Continuation for All Vehicles:

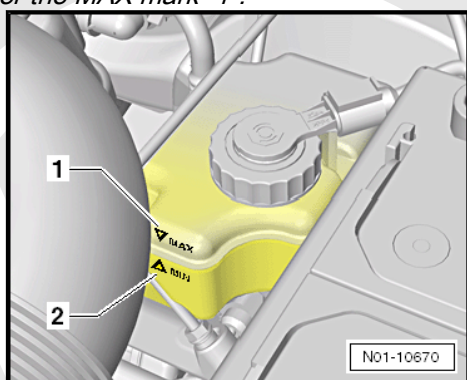


- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.

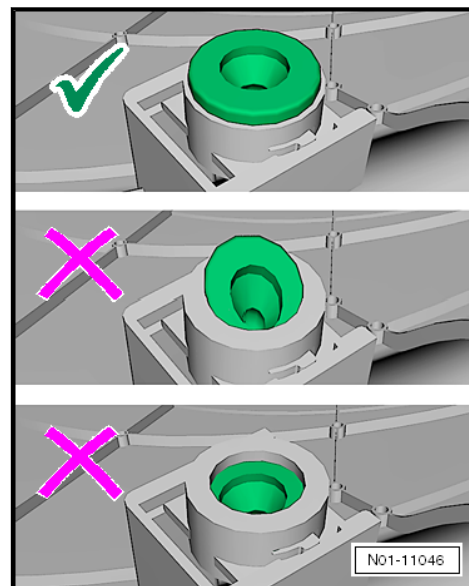


Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



- Make sure the rubber buffers fit correctly in the mounts when installing the engine cover.



Caution

Make sure the four fasteners (ball sockets) are positioned correctly before installing the engine cover. Move them back into their position, if necessary. Otherwise it could cause damage to the engine cover.

Tightening Specifications

- ◆ Refer to ➔ [-3.1 Brake Booster/Brake Master Cylinder”, page 304](#)
- ◆ Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axles, Overview and Servicing.
- ◆ Refer to ➔ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Muffler.
- ◆ Refer to ➔ Rep. Gr. 26; Exhaust System.
- ◆ Refer to ➔ Heating, Ventilation and Air Conditioning; Rep. Gr. 80; Heater, Disassembling and Assembling; Air Distribution Housing Lever, Removing and Installing.
- ◆ Refer to ➔ Body Exterior; Rep. Gr. 50; Noise Insulation.
- ◆ Refer to ➔ Body Interior; Rep. Gr. 70; Instrument Panel.



4 Vacuum System

⇒ [4.1 Vacuum Pump", page 436](#)

⇒ [S4.2 ystem, Checking", page 437](#)

⇒ [V4.3 alve, Checking", page 443](#)

⇒ [V4.4 acuum Sensor G608, Removing and Installing", page 444](#)

⇒ [4.5 Electric Vacuum Pump", page 445](#)

⇒ [P4.6 ump, Removing and Installing", page 447](#)

⇒ [B4.7 ooster Pressure Sensor, Removing and Installing", page 450](#)

4.1 Overview - Vacuum Pump

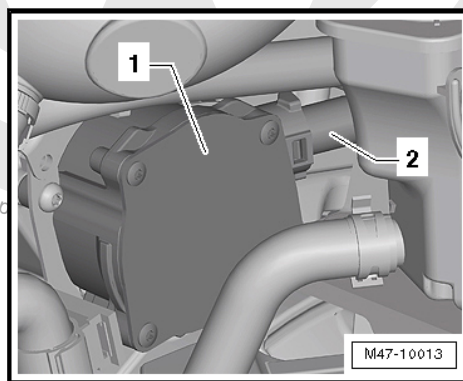
⇒ [B4.1.1 ooster Vacuum Pump \(2.5L Gasoline Engine\)", page 436](#)

⇒ [B4.1.2 ooster Vacuum Pump \(2.0L Gasoline Engine\)", page 436](#)

⇒ [B4.1.3 ooster Vacuum Pump, Diesel Vehicles", page 437](#)

4.1.1 Brake Booster Vacuum Pump (2.5L Gasoline Engine)

Must not be disassembled.



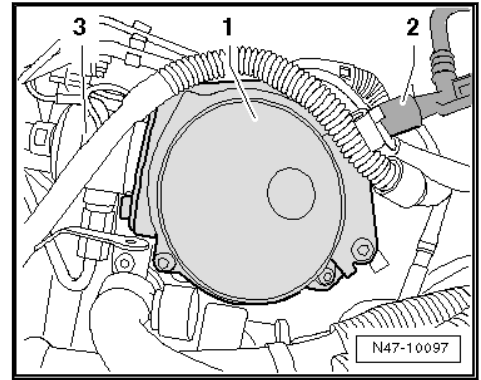
Vacuum pump -1-.

Vacuum line to brake booster -2- with check valve.

- Vacuum pump, removing and installing. Refer to ⇒ Rep. Gr. 15; Cylinder Head; Vacuum Pump, Removing and Installing.

4.1.2 Brake Booster Vacuum Pump (2.0L Gasoline Engine)

Must not be disassembled.



1 - Vacuum Pump

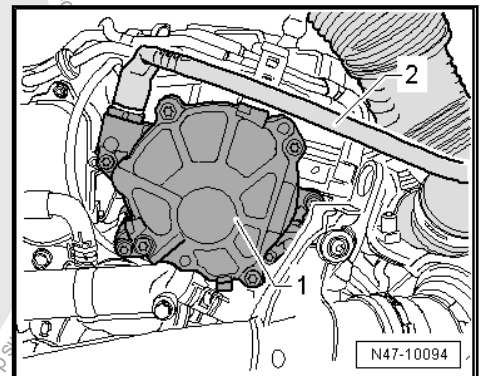
2 - Vacuum hose to brake booster with check valve

3 - High Pressure Fuel Pump

- Vacuum pump, removing and installing. Refer to ➔ Rep. Gr. 15; Cylinder Head; Vacuum Pump, Removing and Installing.

4.1.3 Brake Booster Vacuum Pump, Diesel Vehicles

Must not be disassembled.



Vacuum pump -1-.

Vacuum hose to brake booster -2- with check valve.

- Vacuum pump, removing and installing. Refer to ➔ Rep. Gr. 15; Cylinder Head; Vacuum Pump, Removing and Installing.

4.2 Vacuum System, Checking

⇒ [I4.2.1 instruction", page 437](#)

⇒ [B4.2.2 rake Servo Tester VAS6721, Connecting", page 438](#)

⇒ [C4.2.3 hecking", page 440](#)

⇒ [T4.2.4 est", page 441](#)

⇒ [C4.2.5 reating with Hand Vacuum Pump VAS6213 ", page 442](#)

4.2.1 Inspection Instruction

Inspection Instruction

If a customer has reported a problem with the brake booster or a so-called »hard brake pedal«, perform a Fault Finding.



The following components are included in the check:

- ◆ Brake Booster
- ◆ Gasket between the brake master cylinder and the brake booster
- ◆ Check Valve
- ◆ Vacuum hoses with connectors
- ◆ Vacuum pump (if equipped). Refer to ➤ [B3 ooster/Brake Master Cylinder](#), page 304 .

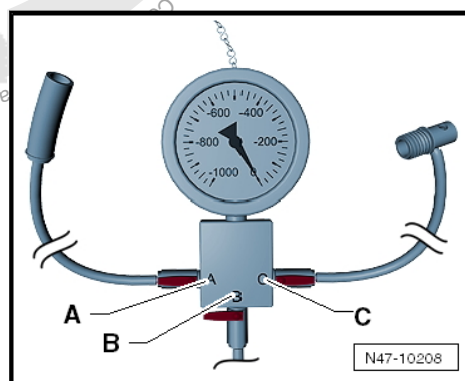
The geographic location will influence the measurement results.
The higher above sea level, the lower the air pressure.

Note the test requirements:

- ◆ Visually inspect all of the vacuum hoses for damage (for example, tears or damage caused by animals) and secure fit
- ◆ Maintain clean working conditions when working on the vacuum system
- ◆ Clean the engine compartment before starting work, if necessary

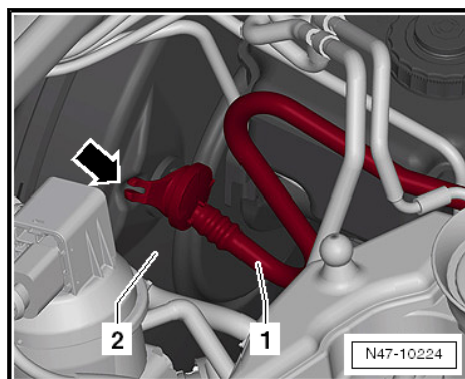
Special tools and workshop equipment required

- ◆ Brake Servo Tester -VAS6721-



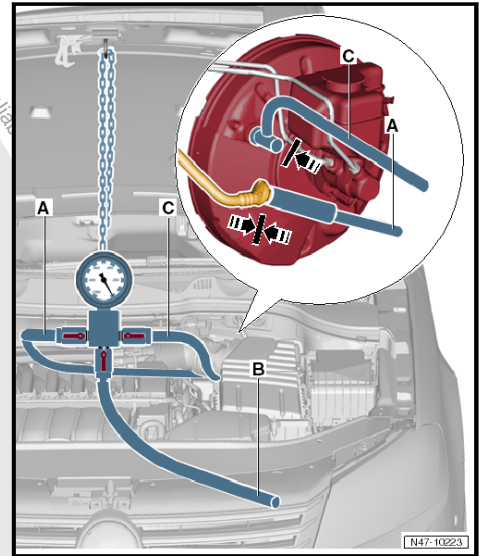
4.2.2 Brake Servo Tester -VAS6721-, Connecting

- Pull the vacuum hose -1- from the brake booster -2-.



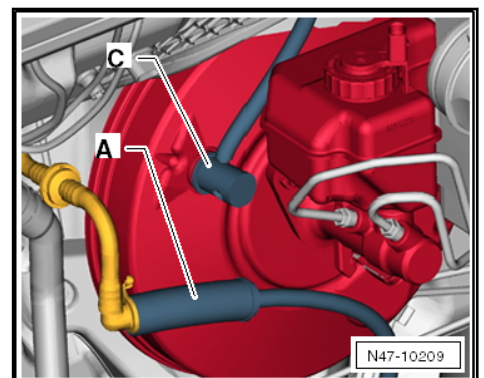
Pressing the brake pedal a few times beforehand makes it easier to remove the vacuum hose.

- Connect the Brake Servo Tester -VAS6721-
-see following illustrations-.



Position	Component	Explanation
A	Shut-off valve	In direction toward the vacuum hose, the check valve and vacuum pump (if equipped)
B	Shut-off valve	<ul style="list-style-type: none"> ◆ Opening makes the Brake Servo Tester - VAS6721- removal easier. ◆ Open to simulate a malfunction source ◆ Connect the Hand Vacuum Pump - VAS6213-.
C	Shut-off valve	In the direction toward the brake booster

- Connect the Brake Servo Tester -VAS6721- hose -A- to the vacuum hose.



- Push the adapter -C- into the brake booster.



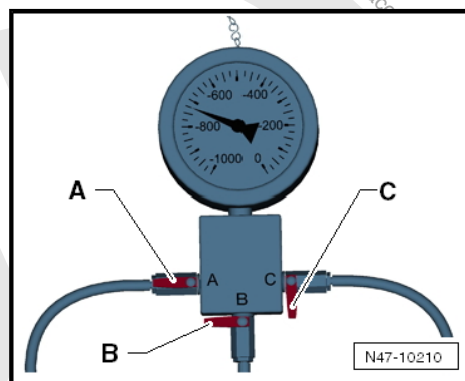
4.2.3 Vacuum, Checking



Note

- ♦ *The average earth atmospheric air pressure at sea level (N. N.) is 1013 mbar (14.69 psi).*
- ♦ *The air pressure decreases dramatically at higher altitudes (approximately 100 mbar (1.45 psi) every 1000 meters (3280.84 feet) higher).*
- ♦ *Local and time fluctuations also influence the vacuum.*
- ♦ *A cold engine, the A/C switched on and even only the engine idling can negatively influence the vacuum.*

- Check all the vacuum hoses beforehand for damage (for example, tears or damage caused by animals) and secure fit.
- Connect the Brake Servo Tester -VAS6721-. Refer to ➤ [B4.2.2 Brake Servo Tester VAS6721, Connecting](#), page 438.
- Open the shut-off valve -A-.
- Close the shut-off valves -B and C-.



- Start the warm (greater than 60 °C (140 °F)) engine and press the accelerator pedal once briefly (engine speed higher than 2,000 RPM).
- Read the displayed measured value.

Normally (see note), the vacuum should be between 600 and 950 mbar (8.7 and 13.77 psi) (depending on the engine installed).

Check the vacuum system for leaks if the measured value is not reached, even though all requirements (see notes) are met.

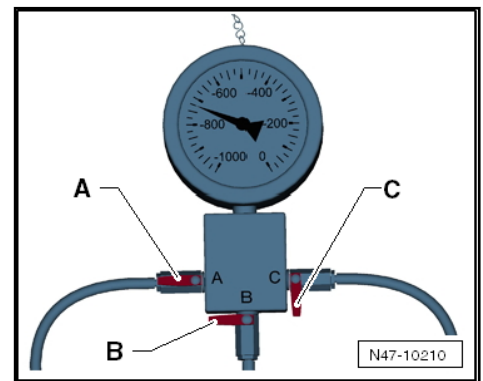
- Create a vacuum using the Hand Vacuum Pump -VAS6213- for comparison purposes. Refer to ➤ [C4.2.5 Working with Hand Vacuum Pump VAS6213](#), page 442.

Opening the shut-off valve -B- makes it easier to remove the hose connections and the adapter.

4.2.4 Leak Test

Note

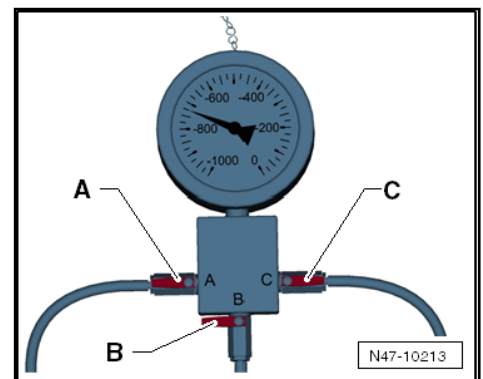
- ◆ *The average earth atmospheric air pressure at sea level (N. N.) is 1013 mbar (14.69 psi).*
- ◆ *The air pressure decreases dramatically at higher altitudes (approximately 100 mbar (1.45 psi) every 1000 meters (3280.84 feet) higher).*
- ◆ *Local and time fluctuations also influence the vacuum.*
- ◆ *A cold engine, the A/C switched on and even only the engine idling can negatively influence the vacuum.*
- Check all the vacuum hoses beforehand for damage (for example, tears or damage caused by animals) and secure fit.
- Connect the Brake Servo Tester -VAS6721-. Refer to [B4.2.2 Brake Servo Tester VAS6721, Connecting](#), page 438.
- Open the shut-off valve -A-.
- Close the shut-off valves -B and C-.



- Start the warm (greater than 60 °C (140 °F)) engine and press the accelerator pedal once briefly (engine speed higher than 2,000 RPM).

Normally (see note), the vacuum should be between 600 and 950 mbar (8.7 and 13.77 psi) (depending on the engine installed).

- Open the shut-off valve -C- to evacuate the brake booster.



- Turn off the engine.
- Read the displayed measured value and write it down.



The vacuum may drop 400 mbar (5.8 psi) within 12 hours.

If the drop in vacuum is greater, check the....

1 - Brake Booster

or

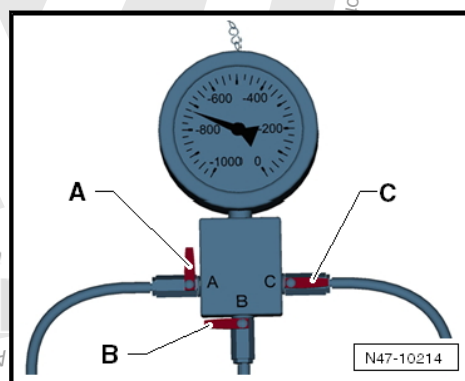
2 - Check Valve, Vacuum Hoses with Connectors and Vacuum Pump/Intake Manifold

for leaks.

The vacuum will drop considerably within a few seconds if there are large leaks.

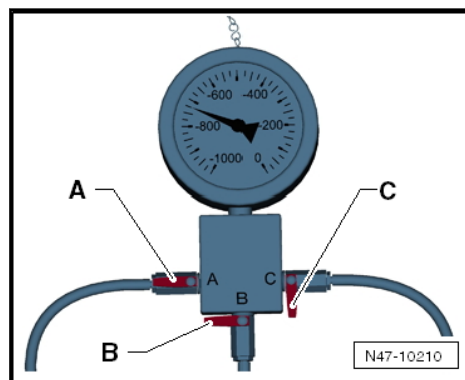
Checking the Vacuum near the Brake Booster:

- Close the shut-off valve -A- after creating the vacuum to test the brake booster vacuum.



Vacuum, Checking near Check Valve, Vacuum Hoses with Connectors and Vacuum Pump/Intake Manifold

- Close the shut-off valve -C- after creating the vacuum to check the Brake Servo Tester -VAS6721- vacuum up to the intake manifold or up to the vacuum pump.



Opening the shut-off valve -B- makes it easier to remove the hose connections and the adapter.

4.2.5 Vacuum, Creating with Hand Vacuum Pump -VAS6213-

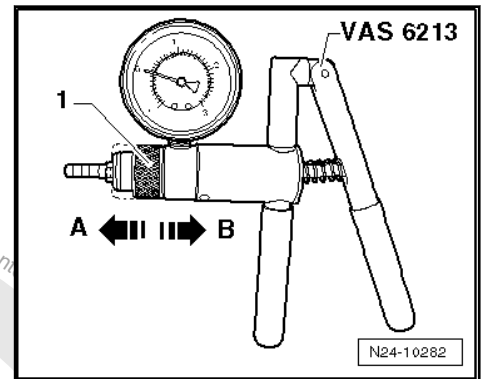
Special tools and workshop equipment required

- ◆ Hand Vacuum Pump -VAS6213-

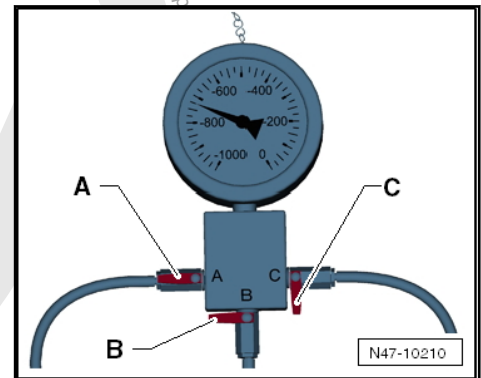
In certain situations, the vacuum can also be created using the Hand Vacuum Pump -VAS6213- instead of using the engine or a vacuum pump.



- Set the slide ring -1- on the Hand Vacuum Pump -VAS6213- in position -A- for “vacuum”.

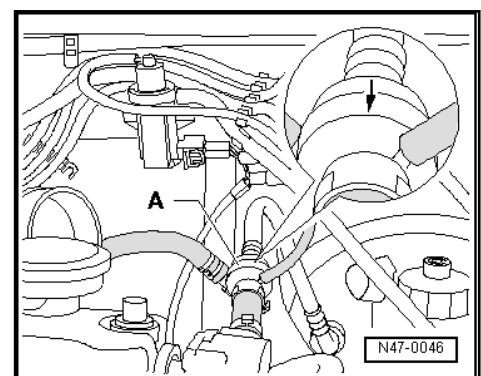


- To do so, connect the Hand Vacuum Pump -VAS6213- to the vacuum hose of the connection -B- on the Brake Servo Tester -VAS6721-.



- Open the shut-off valve -B-.
- Create the vacuum using the Hand Vacuum Pump -VAS6213- until a vacuum between 600 and 950 mbar (8.7 and 13.77 psi) is displayed on the Brake Servo Tester -VAS6721-.
- Then perform the relevant tests.

4.3 Check Valve, Checking



- ◆ The check valve -A- must allow air to flow through in the direction of the-arrow- .
- ◆ The check valve must remain closed for the opposite direction.

Observe the correct installation position!



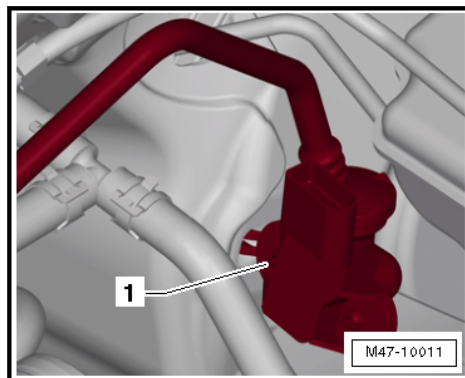
4.4 Vacuum Sensor -G608-, Removing and Installing

Only on vehicles with a hydraulic brake booster:

Removing

Vehicles with a Gasoline Engine

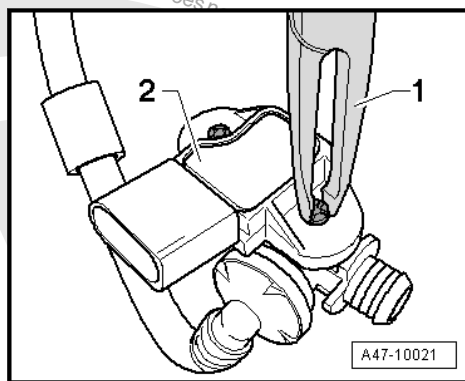
- Release and disconnect the connector from the Vacuum Sensor -G608-.
- Remove the vacuum line and the Vacuum Sensor -G608- -1- from the brake booster.



Continuation for All Vehicles

Remove the Vacuum Sensor -G608- from the vacuum line.

- Release clips with pliers -1-.

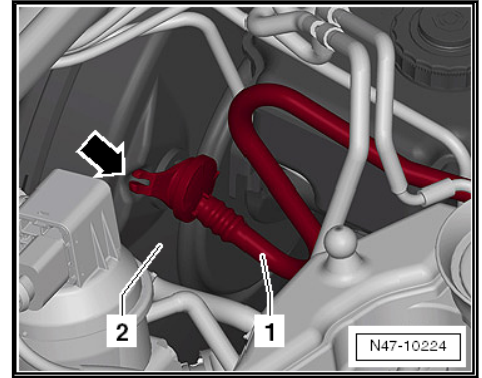


- Carefully lower the Vacuum Sensor -G608- -2-.

Installing

Install in reverse order of removal. Note the following:

- Attach the Vacuum Sensor -G608- carefully to the vacuum line.
- Install the vacuum sensor and the rubber seal in the brake booster.
- Make sure the rubber seal fits securely.
- Insert the tab on the vacuum line -1- into the opening -arrow- in the brake booster -2-.



4.5 Overview - Electric Vacuum Pump

⇒ [-4.5.1 Brake System Vacuum Pump V192, Gasoline Engine”, page 445](#)

⇒ [-4.5.2 Brake System Vacuum Pump V192, Hybrid”, page 446](#)

4.5.1 Overview - Brake System Vacuum Pump -V192-, Gasoline Engine

Only on gasoline vehicles with DSG® transmission without a hydraulic brake booster





1 - Screw

- 8 Nm
- Quantity: 2

2 - Brake System Vacuum Pump -V192-

- Removing and installing. Refer to ➤ [P4.6 ump, Removing and Installing", page 447](#) .

3 - Brake Booster Pressure Sensor -G294-

- Removing and installing. Refer to ➤ [B4.7 ooster Pressure Sensor, Removing and Installing", page 450](#) .

4 - Vacuum Line

- Allocation. Refer to the Parts Catalog.

5 - Bracket

6 - Cable Bracket

7 - Rubber Bushing

- Allocation. Refer to the Parts Catalog.
- Quantity: 3
- Do not press the rubber bushings out of the bracket during installation

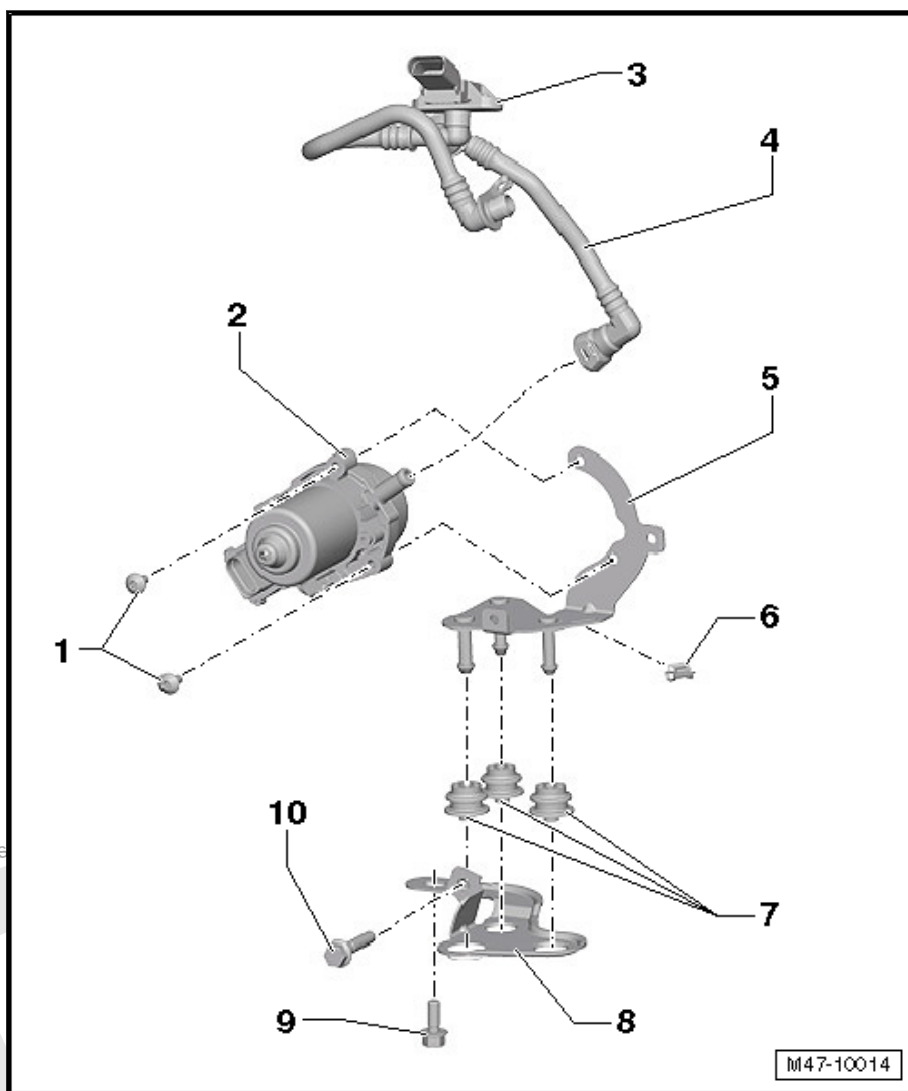
8 - Bracket

9 - Screw

- 25 Nm

10 - Screw

- 25 Nm



4.5.2 Overview - Brake System Vacuum Pump -V192-, Hybrid



1 - Screw

- ☐ 7 Nm
- ☐ Quantity: 2

2 - Brake System Vacuum Pump -V192-

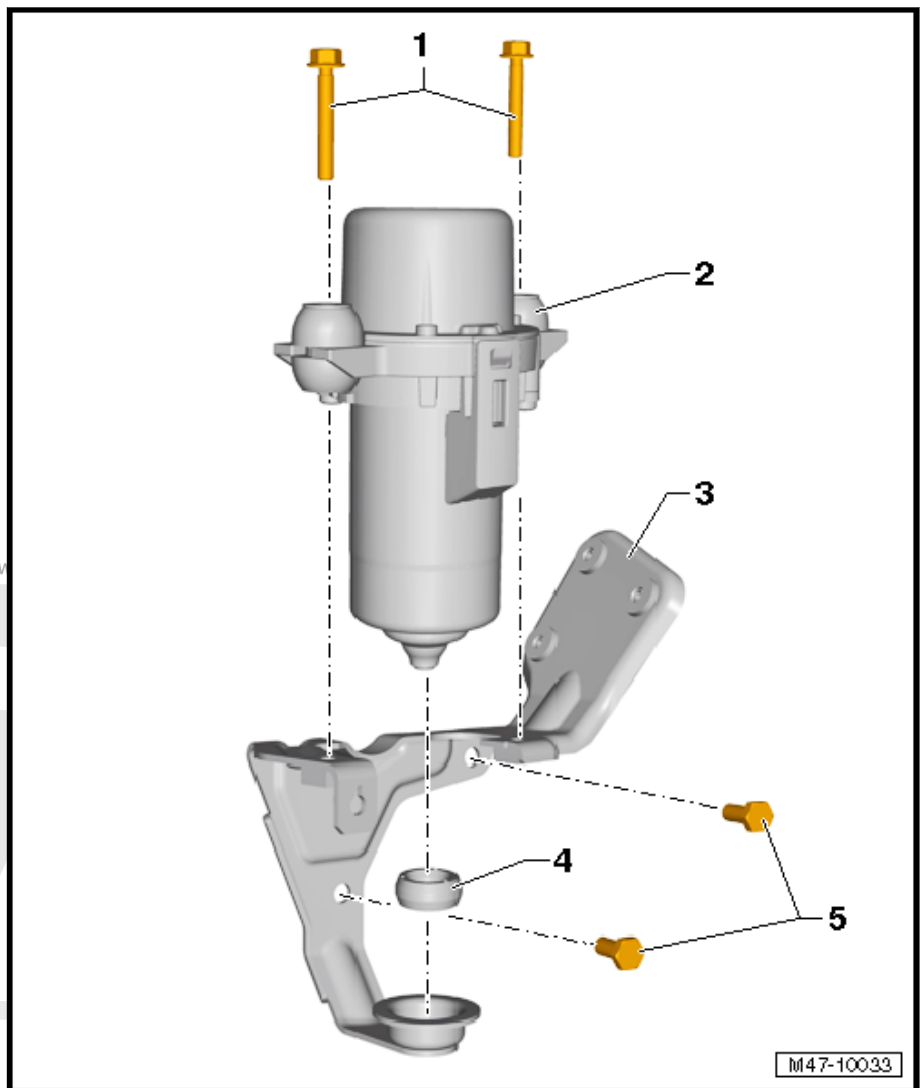
- ☐ Removing and installing. Refer to ➤ [B4.6.2 Brake System Vacuum Pump V192, Removing and Installing, Hybrid", page 449](#).

3 - Bracket

4 - Buffer

5 - Screw

- ☐ 25 Nm
- ☐ Quantity: 2



4.6 Vacuum Pump, Removing and Installing

➤ [B4.6.1 Brake System Vacuum Pump V192, Removing and Installing, Gasoline Engine", page 447](#)

➤ [B4.6.2 Brake System Vacuum Pump V192, Removing and Installing, Hybrid", page 449](#)

4.6.1 Brake System Vacuum Pump -V192-, Removing and Installing, Gasoline Engine

Perform the Following:

Removing

Component location of Brake System Vacuum Pump -V192- is located on DSG® transmission at front in direction of travel.

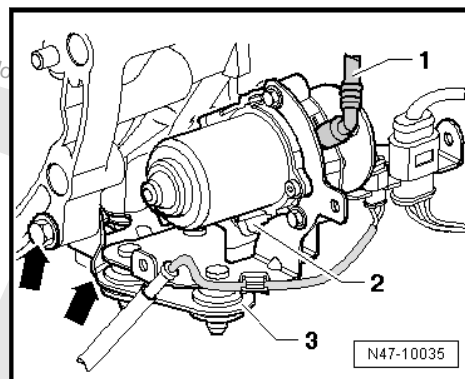
It is not possible to service the Brake System Vacuum Pump -V192-. If there is a malfunction, replace Brake System Vacuum Pump -V192-.



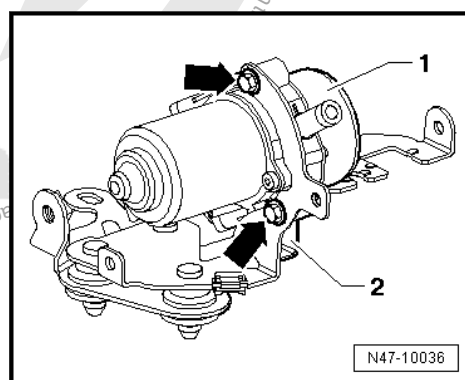
Note

The illustrations show the Brake System Vacuum Pump -V192- horizontally. It is installed vertically on other engine/transmission combinations.

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Disconnect the vacuum line -1- from the Brake System Vacuum Pump -V192-.

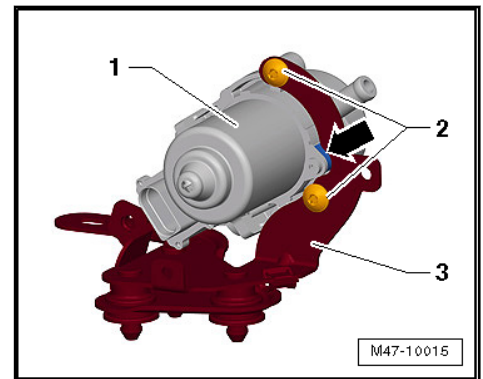


- Release and disconnect the harness connector -2- for the Brake System Vacuum Pump -V192-.
- Unclip the wiring harnesses and lines from the bracket -3-.
- Unscrew the bracket bolts -arrows- -3-.
- Remove bracket -2 and 3- using the Brake System Vacuum Pump -V192-.
- Then unscrew -arrows- Brake System Vacuum Pump -V192- -1- from bracket -2-.





Installing



Install in reverse order of removal. Note the following:

Installation Position of the Brake System Vacuum Pump -V192-:

- The Brake System Vacuum Pump -V192- -1- must be positioned with the guide tab -arrow- in the bracket opening -3-.
- Use bolts to tighten down the Brake System Vacuum Pump -V192- -1- -2-.

Tightening Specifications

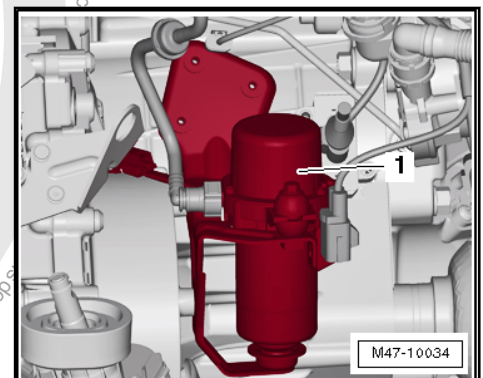
- ◆ Refer to ➤ [-4.5 Electric Vacuum Pump”, page 445](#)

4.6.2 Brake System Vacuum Pump -V192-, Removing and Installing, Hybrid

Perform the Following:

Removing

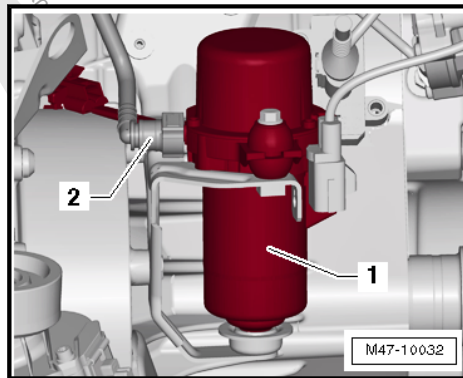
Component Location of the Brake System Vacuum Pump -V192-:



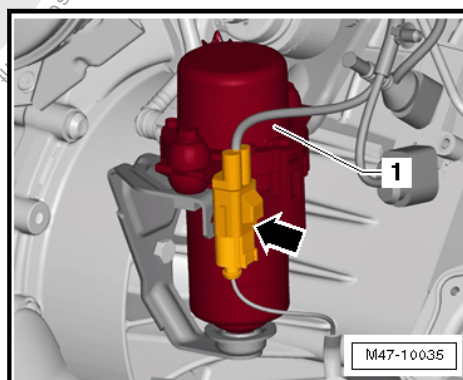
The Brake System Vacuum Pump -V192- -1- is located on the rear side of the motor.

It is not possible to service the Brake System Vacuum Pump -V192-. If there is a malfunction, replace Brake System Vacuum Pump -V192-.

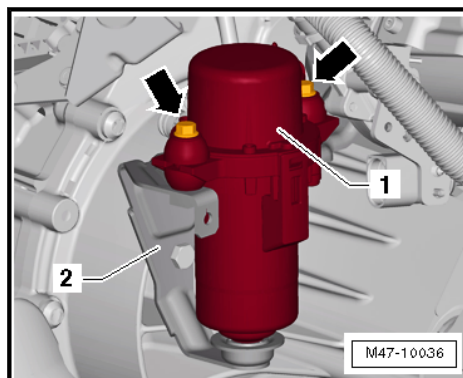
- Remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 50; Noise Insulation.
- Disconnect the vacuum line -2- from the Brake System Vacuum Pump -V192- -1-.



- To do this press the release button.
- Release and disconnect the connector -arrow- from the Brake System Vacuum Pump -V192- -1-.



- Removes the bolt -arrows- on the bracket -3-.



- Remove the Brake System Vacuum Pump -V192- -1- from the bracket -3-.

Tightening Specifications

- ◆ Refer to ➤ [-4.5.2 Brake System Vacuum Pump V192, Hybrid-, page 446](#)
- ◆ Refer to ➤ Body Exterior; Rep. Gr. 50; Noise Insulation.

4.7 Brake Booster Pressure Sensor, Removing and Installing

Only on gasoline vehicles with DSG® transmission without a hydraulic brake booster

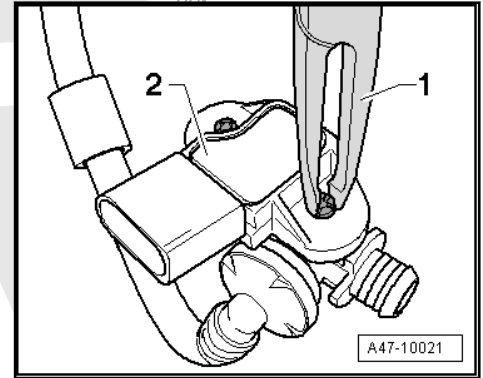


Perform the Following:

Removing

Remove the vacuum line, if necessary -item 17- ➔ [Item 17](#)
([page 306](#))

- Remove the vacuum hose and the Brake Booster Pressure Sensor -G294- from the brake booster.
- Release clips with pliers -1-.



- Carefully pry out the Brake Booster Pressure Sensor -G294-
-2-.



5 Brake Lines

5.1 Brake Lines, Repairing

⇒ -5.1.1 Flanging Tool", page 452

⇒ 5.1.2 , page 453

5.1.1 Overview - Flanging Tool

1 - Flanging Tool Upper Section

- ❑ Remove to replace the Brake Line Tool Kit - Flanging Tool - VAS6065/1-.

2 - Handle Fastener

- ❑ Must be removed to reach the upper section bolt

3 - Bolt

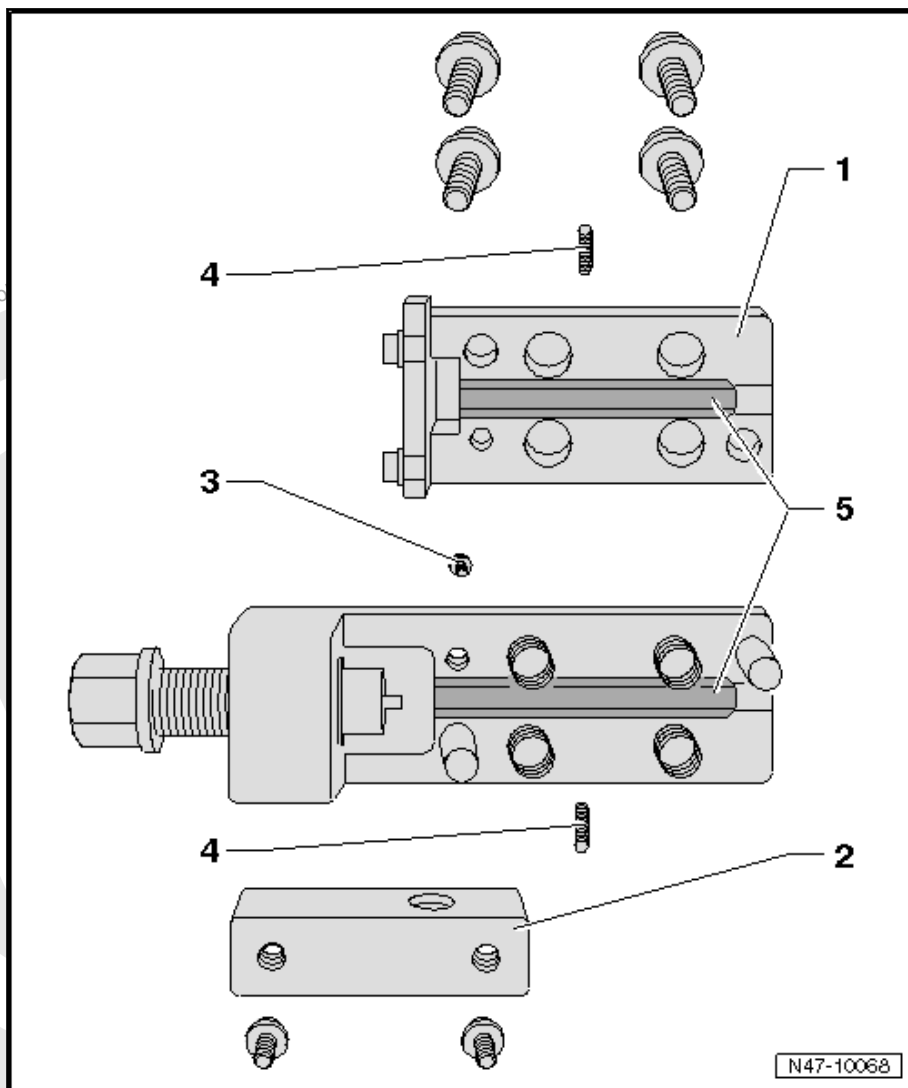
- ❑ For the flanging tool upper section

4 - Threaded Pins for Brake Line Tool Kit - Flanging Tool - VAS6065/1-

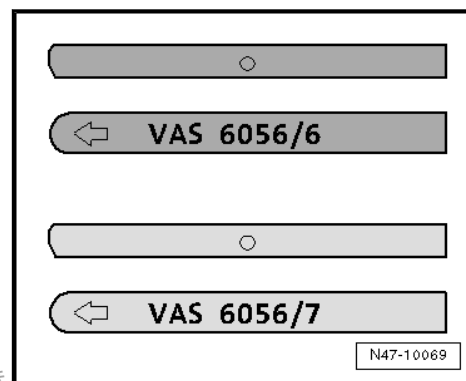
- ❑ Center and hold the Flaring Jaws
- ❑ 2 mm inner hex socket

5 - Brake Line Tool Kit - VAS6065/1-

- ❑ Variance
- ❑ Assembly instructions. Refer to ⇒ Fig. "Assembly Instructions for Flaring Jaws:", page 452



Assembly Instructions for Flaring Jaws:



- ◆ Clamp Jaws (Plastic Coated Brake Lines Diam = Approx. 5.25mm -VAS6056/6-(dark) for black brake lines
- ◆ Clamp Jaws (Brake Line Diam = Approx. 4.75mm - VAS6056/7- (light) for green brake lines



Note

- ◆ *The arrow on the rounded side of the Brake Line Tool Kit - Flanging Tool -VAS6056/1- must point toward the edge of the housing.*
- ◆ *The straight side of the Brake Line Tool Kit - Flanging Tool -VAS6056/1- must be installed toward spindle, otherwise flared head will not be formed correctly.*

5.1.2 Instructions

Special tools and workshop equipment required

- ◆ Brake Line Tool Kit -VAS6056-
- ◆ Brake Charger/Bleeder Unit -VAS5234-

Flare the brake lines with 5 mm outer diameter using the Brake Line Tool Kit -VAS6056- without damaging coating. In this way, brake lines can be inexpensively replaced in partial sections in certain cases.

Working with Flaring Appliance -VAG1356- is not permitted because of the coating and diameter of black brake lines.

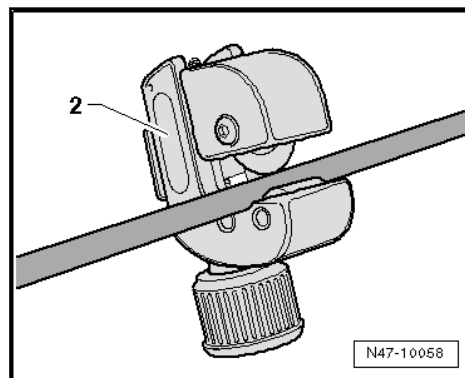


Note

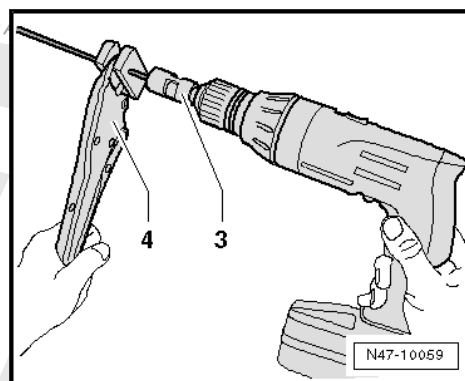
- ◆ *The brake lines may be bent maximum 90° otherwise they will break or be permanently deformed.*
- ◆ *If the brake line is bent more than 90°, the diameter of the line will be changed.*
- ◆ *Disconnect the brake lines preferably at the underbody.*
- ◆ *The position of the intermediate pieces should be selected so that they cannot rub against the moving parts.*
- ◆ *Do not lubricate the spindle, clean only with mineral spirits.*
- Remove brake line on the brake caliper or wheel brake cylinder.
- Be sure to catch any leaking brake fluid and dispose of it correctly.



- Cut the brake line at a suitable place (straight, easily accessible piece) with the tube cutter -2-.



- Remove the piece to be exchanged.
- Lubricate the brake line surface.
- Pinch the brake line in a set of locking pliers -4- so that 50 mm is sticking out of the plastic jaws.



- Install the peeling tool -3- in a power drill and place it on the brake line.
- Shear the coating from the brake line.
- To do this, press lightly against the brake line at a slow drill RPM.

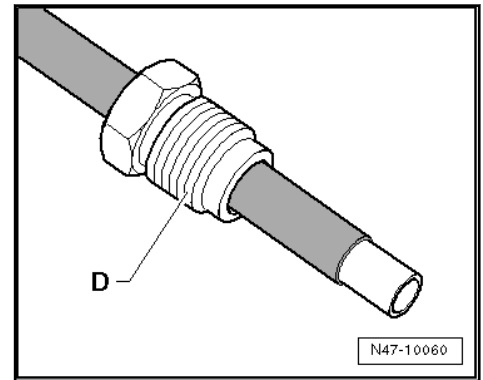


Note

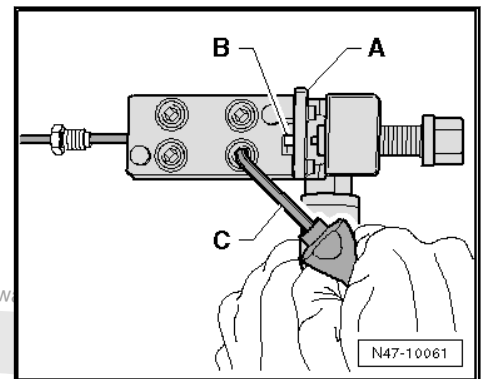
The length of the sheared-off portion is determined by the stop in the shearing tool.

- Remove shearing tool from brake line and remove shavings.
- Remove the locking pliers and push the tube fitting -D- onto the brake line.





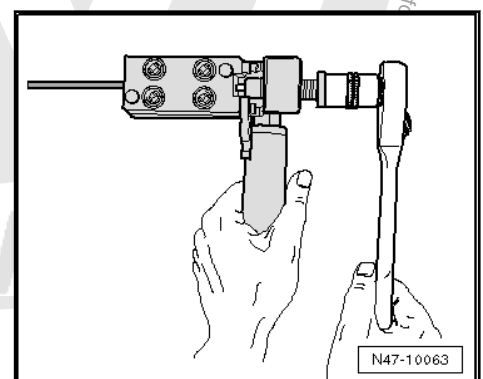
- Push the brake line -B- against the stop -A- inside the flaring tool.



i Note

The brake line must contact the stop when tightening the hex socket bolts, otherwise the flanged head will not be formed correctly.

- Pretension the brake line inside the flaring unit until the brake line can no longer be moved.
- Fold up stop -A-.
- Tighten the hex socket head bolts diagonally using a long reach special wrench -C-.
- Turn the spindle all the way in the flange unit.



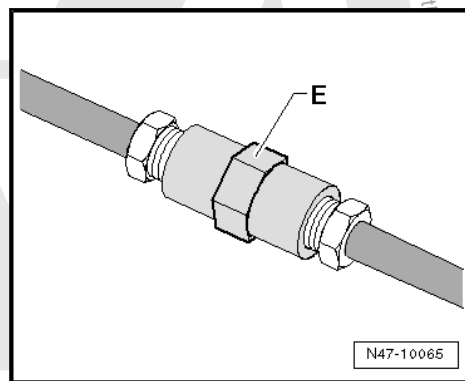
- Turn the spindle back.
- Loosen the hex socket head bolts diagonally.
- Remove the brake line from the flange unit.



- Check and clean the brake line and the flared head.

Briefly rinse the part of the brake line remaining in the vehicle:

- Connect the Brake Charger/Bleeder Unit -VAS5234-, place the bleeder container hose on the flared head of the brake line and run the Brake Charger/Bleeder Unit -VAS5234- briefly until some brake fluid runs through.
- Clean the new brake line to be inserted with compressed air.
- Join the brake lines with the connecting piece -E-.



- Install the brake line.
- Bleed the brake system. Refer to [⇒ S6 system, page 457](#).



6 Hydraulic System

⇒ [F6.1 Fluid General Information](#), page 457

⇒ [S6.2 System, Pre-Bleeding](#), page 458

⇒ [S6.3 System, Standard Bleeding](#), page 460

⇒ [S6.4 System, Post-Bleeding](#), page 463

⇒ [T6.5 Test](#), page 464

6.1 Brake Fluid General Information

⇒ [I6.1.1 Information](#), page 457

⇒ [F6.1.2 Fluid, Changing](#), page 458

6.1.1 General Information

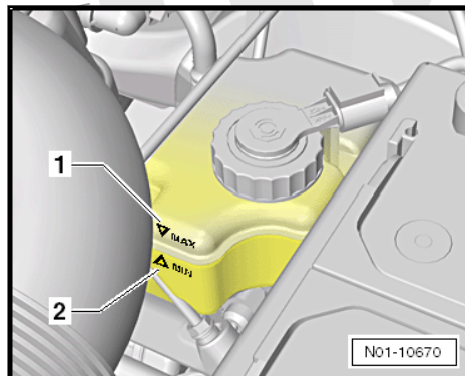
Special tools and workshop equipment required

- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Brake Charger/Bleeder Unit - Used Fluid Bottle - CRP1898020-
- ◆ Brake Bleeding Tool Set -VAS6564-
- ◆ Brake Charge and Bleed Equipment - Upgrade Kit - VAG1869/4-



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



WARNING

Only use new brake fluid conforming to VW standard (VW 501 14).



Note

- ◆ *Bleeding the braking system on vehicles with ABS is carried out as for vehicles with conventional braking systems.*
- ◆ *Brake fluid must never come into contact with fluids containing mineral oils (oil, gas, cleaning solutions). Oils containing minerals damage seals and boots on brake systems.*
- ◆ *Brake fluid is poisonous. Due to its caustic nature, it must also never come in contact with paint.*
- ◆ *Brake fluid is hygroscopic, meaning that it absorbs moisture from the surrounding air, and must therefore be stored in air-tight containers.*
- ◆ *Rinse off any leaking brake fluid using plenty of water.*
- ◆ *Do not reuse brake fluid once drained.*
- ◆ *Follow all disposal regulations.*
- ◆ *Keep containers of brake fluid closed securely. This is to make sure that no oil, dirt or cleaning materials and no humidity can enter the container.*
- ◆ *Store containers of brake fluid carefully.*
- ◆ *Store oil (also hydraulic fluid) and cleaning fluids separately.*
- ◆ *Accidentally mixing fluids or even filling the brake system with the wrong fluid must be prevented.*
- ◆ *If one chamber of the brake fluid reservoir is completely empty, the brake system must be pre-bled. Refer to ➤ [S6.2 system, Pre-Bleeding", page 458](#).*
- ◆ *Changing brake fluid. Refer to ➤ Maintenance; Booklet 20.1; Procedure Descriptions; Brake and Clutch System, Brake Fluid, Changing for maintenance.*
- ◆ *The bleeding of brake system using the Brake Charger/Bleeder Unit -VAS5234- is described.*
- ◆ *An initial pressure of 2 bar (29 psi) is required to bleed the ABS Hydraulic Unit -N55-.*

6.1.2 Brake Fluid, Changing

Maintenance. Refer to ➤ Maintenance; Booklet 20.1; Procedure Descriptions; Brake and Clutch System, Brake Fluid, Changing.

6.2 Hydraulic System, Pre-Bleeding

The Bleeding of Brake System Using the Brake Charger/Bleeder Unit -VAS5234- is described.

There Must Be a Positive Pressure of 2 Bar (29 Psi) to Bleed the Hydraulic Unit.

Special tools and workshop equipment required

- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Bleeder Bottle
- ◆ Brake Bleeding Tool Set -VAS6564-
- ◆ Brake Charge and Bleed Equipment - Upgrade Kit - VAG1869/4-



WARNING

Only use new brake fluid conforming to VW standard (VW 501 14).

Pre-Bleeding

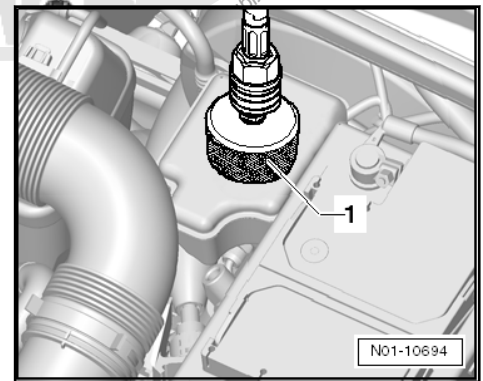
Adhere Strictly to the Procedure When Bleeding the Brake System.

The Bleeding of Brake System Using the Brake Charger/Bleeder Unit -VAS5234- is described.

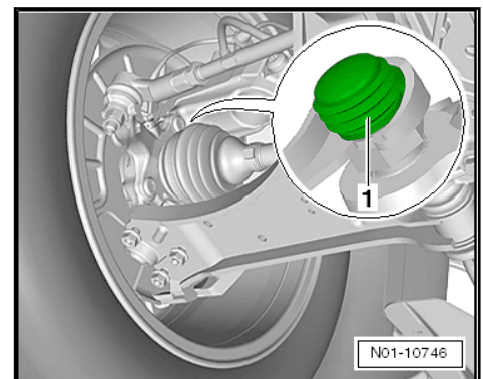
There Must Be a Positive Pressure of 2 Bar (29 Psi) to Bleed the Hydraulic Unit.

See notes. Refer to ➔ [F6.1 luid General Information](#), page [457](#).

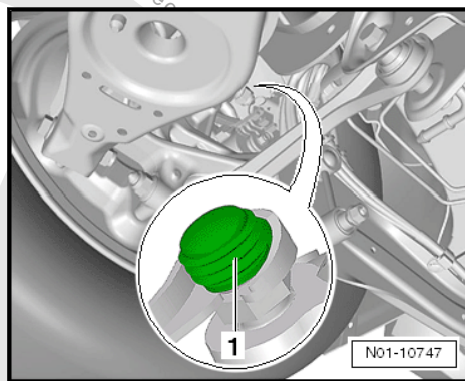
- Fill the brake fluid reservoir up to the max mark.
- Connect the Brake Charger/Bleeder Unit -VAS5234- with the Brake Charger/Bleeder Unit Adapter -VAS5234/1A-.



- Attach the adapter -1- to the brake fluid reservoir.
- Set the correct pressure on the Brake Charger/Bleeder Unit -VAS5234-.
- Refer to the operating instructions for the Brake Charger/Bleeder Unit -VAS5234-.
- Remove the left and right front caps -1-.



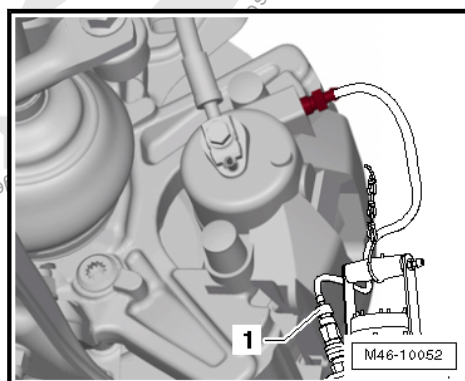
- Remove the left and right rear caps -1-.



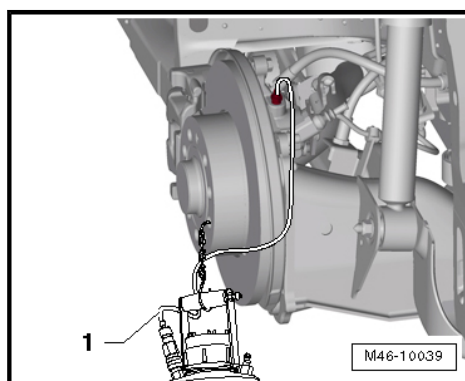
Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.

Bleeding Sequence:

- 1 - Bleed Left Front and Right Front Brake Calipers Simultaneously.



- 2 - Bleed Left Rear and Right Rear Brake Calipers/Brake Cylinders Simultaneously.



- With bleeder bottle hoses attached, leave the breather valves open long enough that brake fluid exits without bubbles.
- Afterward, bleed the brake system normally. Refer to [S6.3 system, Standard Bleeding](#), page 460.

6.3 Hydraulic System, Standard Bleeding

Special tools and workshop equipment required

- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Bleeder Bottle
- ◆ Brake Bleeding Tool Set -VAS6564-



- ◆ Brake Charge and Bleed Equipment - Upgrade Kit - VAG1869/4-

Bleeding

Adhere Strictly to the Procedure When Bleeding the Brake System.

The Bleeding of Brake System Using the Brake Charger/Bleeder Unit -VAS5234- is Described.

There Must Be a Positive Pressure of 2 bar (29 psi) to Bleed the Hydraulic Unit.



WARNING

Only use new brake fluid conforming to VW standard (VW 501 14).

Open the Breather Valves in the Specified Sequence and Bleed the Brake Calipers:

- 1 - Left Front Brake Caliper
- 2 - Right Front Brake Caliper
- 3 - Left Rear Brake Cylinder/Brake Caliper
- 4 - Right Rear Brake Cylinder/Brake Caliper

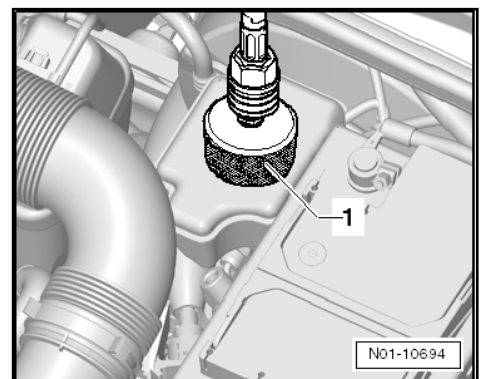


Note

If one chamber of the brake fluid reservoir is completely empty, the brake system must be pre-bled. Refer to ⇒ [S6.2 system. Pre-Bleeding](#), page 458.

See notes. Refer to ⇒ [F6.1 luid General Information](#), page 457.

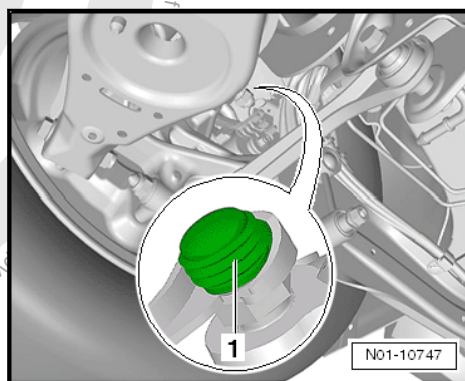
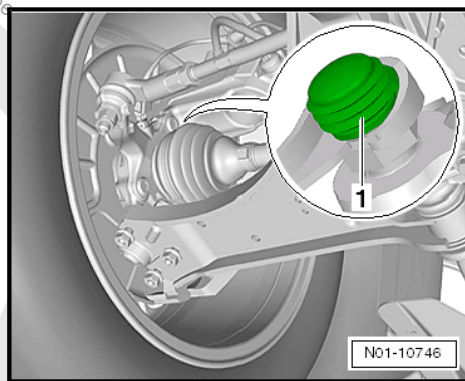
- Fill the brake fluid reservoir up to the max mark.
- Connect the Brake Charger/Bleeder Unit -VAS5234- with the Brake Charger/Bleeder Unit Adapter -VAS5234/1A-.



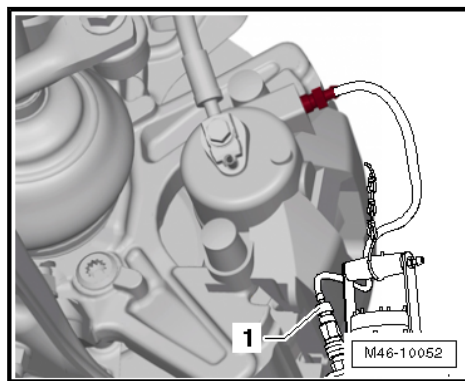
- Attach the adapter -1- to the brake fluid reservoir.
- Set the correct pressure on the Brake Charger/Bleeder Unit -VAS5234-.
- Refer to the operating instructions for the Brake Charger/Bleeder Unit -VAS5234-.
- Remove the left and right front caps -1-.



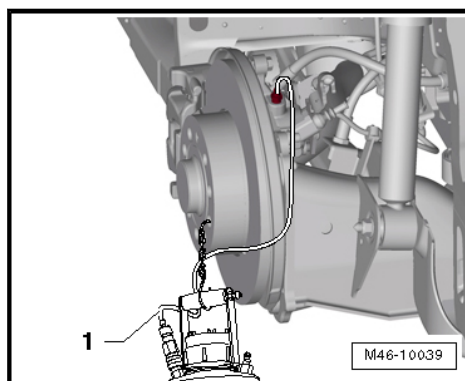
- Remove the left and right rear caps -1-.



Use a Suitable Bleeder Hose. It Must Fit Tightly on the Breather Valve so That No Air Can Get into the Brake System.



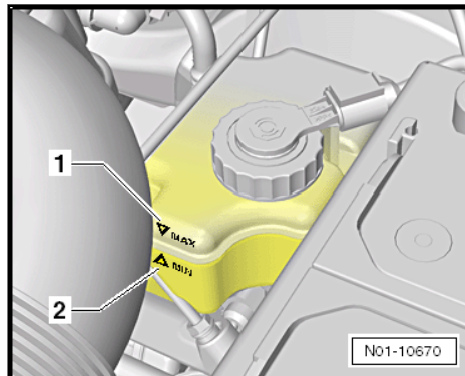
- When bleeding the brake caliper/brake cylinder with bleeder bottle hose attached, leave breather valve open long enough that brake fluid exits without bubbles.





Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



6.4 Hydraulic System, Post-Bleeding

Post-Bleeding



WARNING

Only use new brake fluid conforming to VW standard (VW 501 14).

See notes. Refer to ➔ [F6.1 luid General Information](#), page 457.

A second mechanic is required to assist:



WARNING

*A technician has to sit in the driver seat the entire time.
The brake pedal must not become jammed.*

- Press down on the brake pedal forcefully and hold.
- Open the breather valve at the brake caliper.
- Press the brake pedal down until it stops.
- Close breather valve with the pedal assembly pressed.
- Release the brake pedal slowly.

This Bleeding Procedure Must Be Performed Five Times per Brake Caliper.

Bleeding Sequence:

- 1 - Left Front Brake Caliper
- 2 - Right Front Brake Caliper
- 3 - Left Rear Brake Cylinder/Brake Caliper
- 4 - Right Rear Brake Cylinder/Brake Caliper

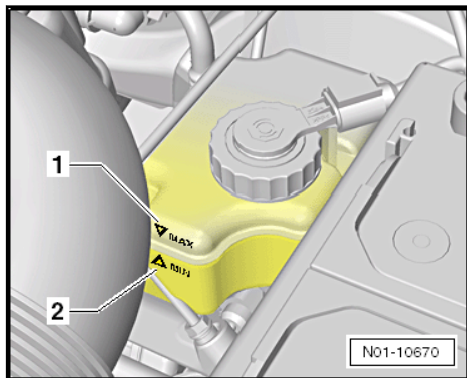


A Road Test Must Be Performed after Bleeding. During This, at Least One ABS Control Test Must Be Performed!



Note

To prevent the brake fluid from overflowing from the reservoir, the level must not be over the MAX mark -1-.



6.5 Leak Test

⇒ [R6.5.1 equirement:", page 464](#)

⇒ [C6.5.2 ylinder, Checking for Leaks", page 464](#)

6.5.1 Test Requirement:

Special tools and workshop equipment required

- ◆ Brake Pressure Gauge -VAG1310A-
- ◆ Brake Pressure Gauge - Adapter M10 -VAG1310/6-
- Brake system function OK and no leaks

Perform the Following:

Checking

- Remove the breather valve at one of the front brake calipers.
- Connect the Brake Pressure Gauge -VAG1310A- and bleed.
- Apply pressure to the brake pedal until the pressure gauge indicates a pressure of 50 bar (725.18 psi). The pressure must not drop more than 4 bar (58.01 psi) during the test period of 45 seconds. Replace the brake master cylinder if the pressure decrease is too high.

6.5.2 Brake Cylinder, Checking for Leaks

Special tools and workshop equipment required

- ◆ Trim Removal Wedge -3409-
- ◆ Torque Wrench 1331 5-50Nm -VAG1331-

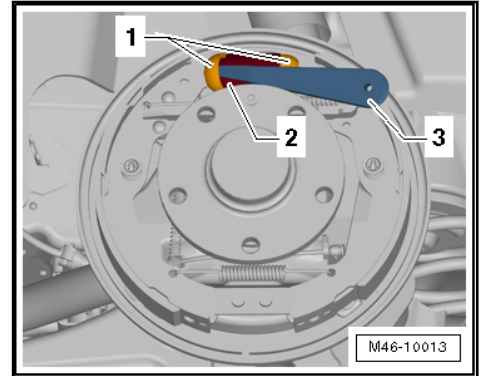
Perform the Following:

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Reset brake. Refer to ⇒ [B2.7 rake, Resetting", page 228](#) .



- Remove brake drum. Refer to ⇒ [D2.5.2 rum, Removing and Installing](#), page 223 .
- Clean the area of the brake cylinder for the visual inspection.
- Slightly lift the dust boot -1- from the brake cylinder -2- with the trim removal wedge -3-.



3 - Trim Removal Wedge -3409-

Be careful not to damage the dust boot when removing it.

- See if there is brake fluid in the dust boot.



Note

It is absolutely necessary to replace the brake cylinder if there are leaks or damage.

Cleaning:



WARNING

Do not blow the brake system using compressed air, the dust produced is harmful to health!

Only Use Mineral Spirits for Cleaning the Brake System.

Installing

Install in reverse order of removal. Note the following:

- Install the wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.
- Adjust the parking brake. Refer to ⇒ [B3.4.1 rake, Adjusting, Drum Brake](#), page 252 .

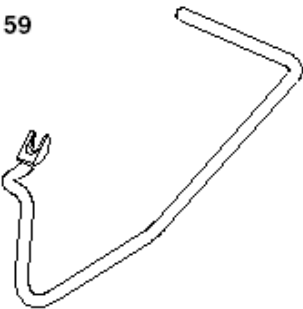
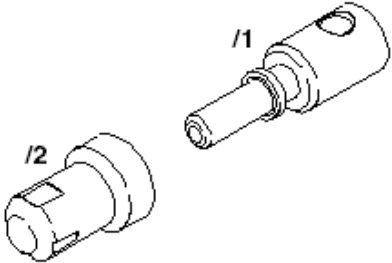
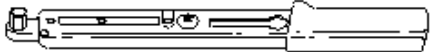

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Rear Brakes](#), page 184
- ◆ Wheel Bolts. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels and Tires.

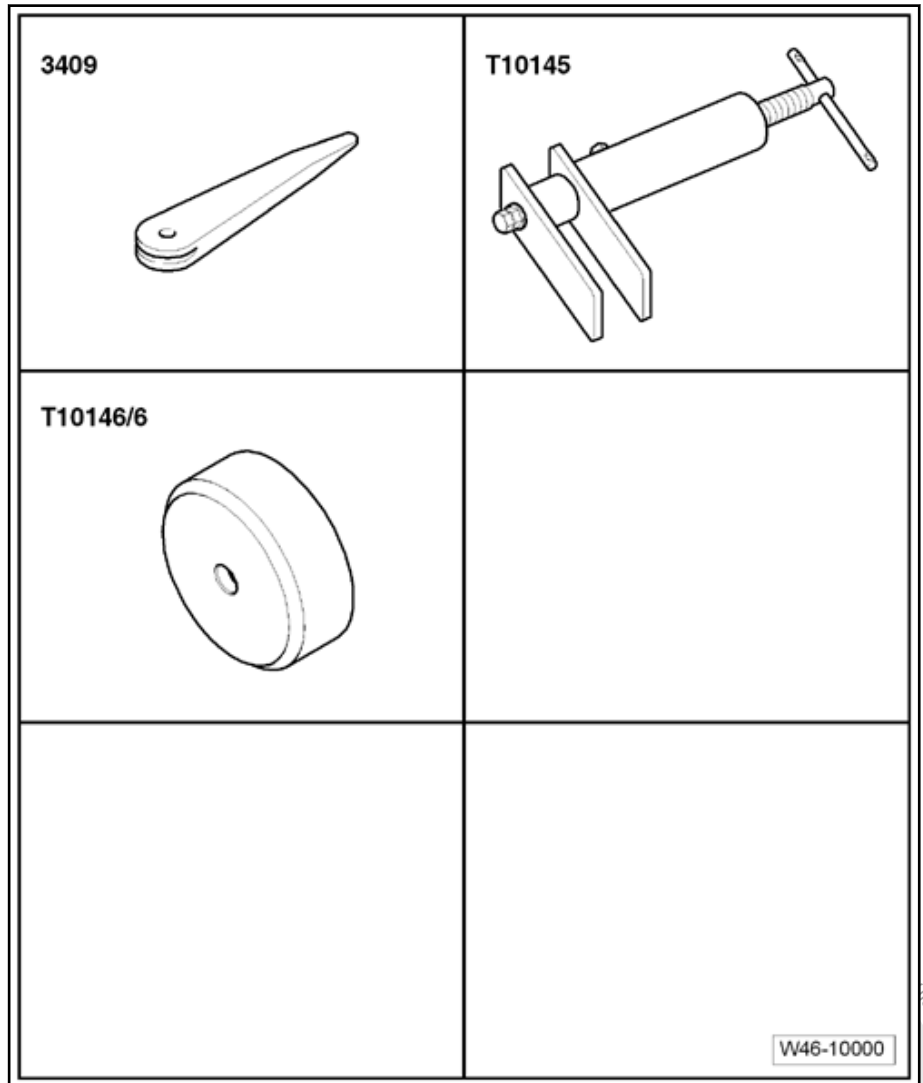


7 Special Tools

Special tools and workshop
equipment required

T10159 	T10249 
V.A.G 1331 	VAS 5234 
	<div>W47-10005</div>

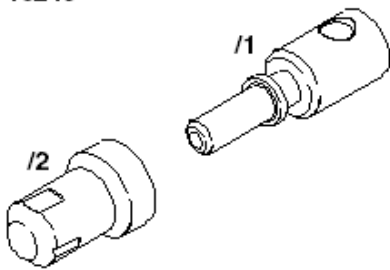

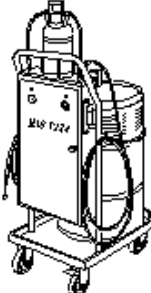
- ◆ Release Tool -T10159-
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-
- ◆ Plug -1H0 698 311 A-



- ◆ Trim Removal Wedge -3409-
- ◆ Piston Resetting Tool -T10145-
- ◆ Assembly Tool -T10146/6-



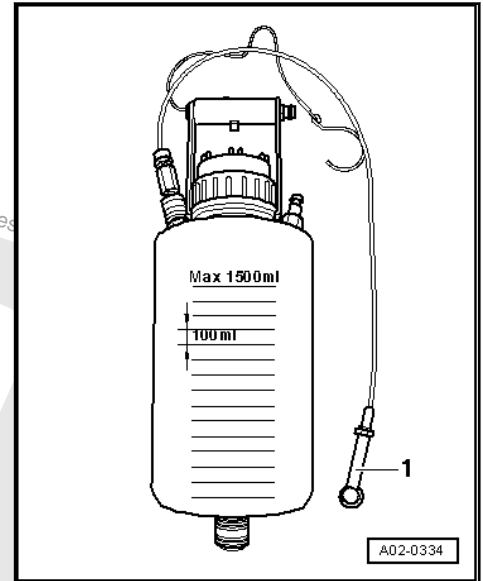


T10249 	V.A.G 1331 
VAS 5234 	
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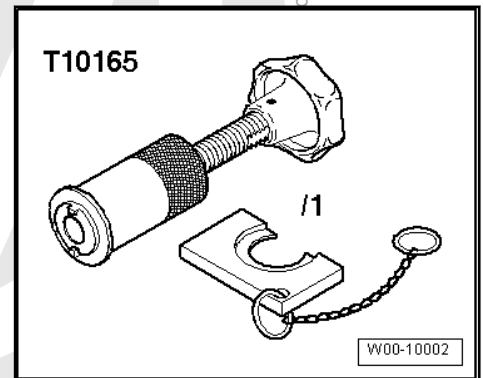
- ◆ Sealing Tool -T10249-
- ◆ Torque Wrench 5-50Nm -VAG1331-
- ◆ Brake Charger/Bleeder Unit -VAS5234-



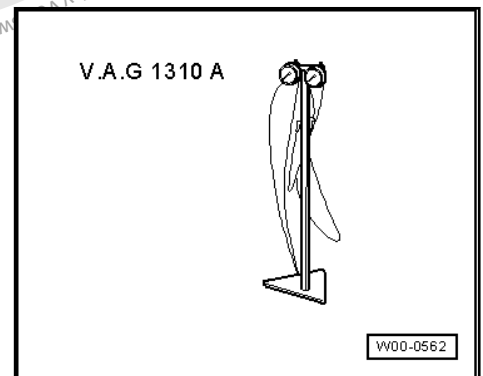
- ◆ Brake Charger/Bleeder Unit - Used Fluid Bottle - CRP1898020-



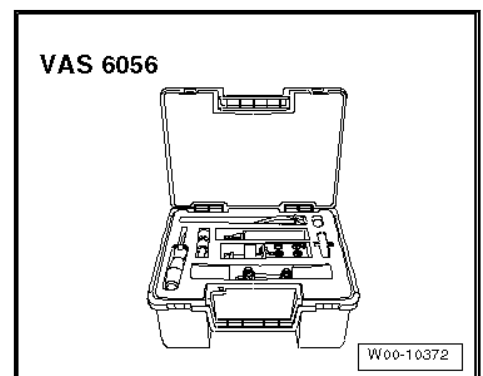
- ◆ Resetting & Extracting Tool -T10165-



- ◆ Brake Pressure Gauge 0-250 bar -VAG1310A-

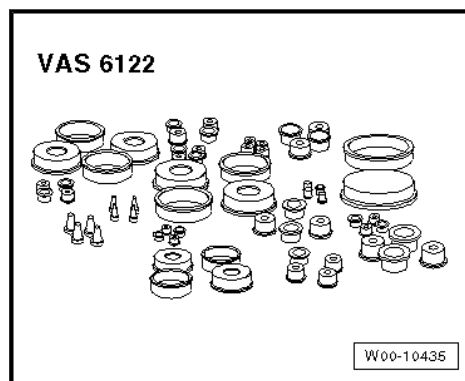


- ◆ Flaring Tool -VAS6056-

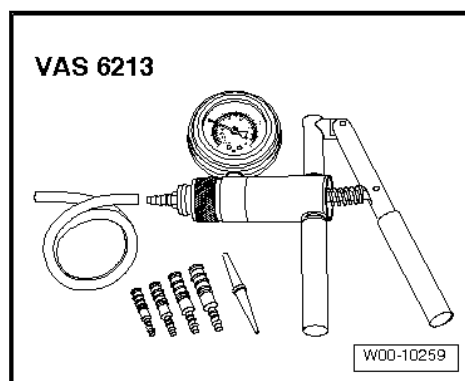




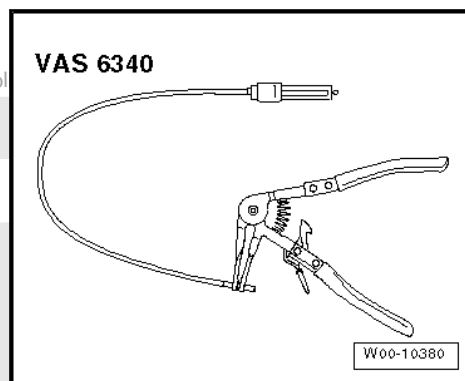
◆ Engine Bung Set -VAS6122-



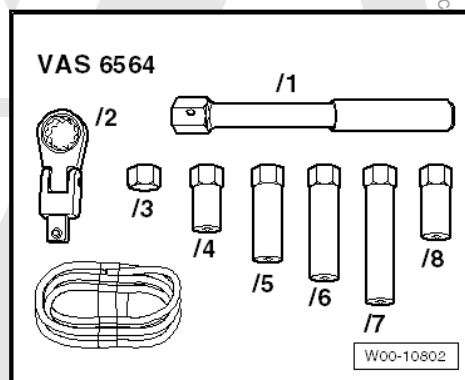
◆ Vacuum Tester -VAS6213-



◆ Hose Clip Pliers -VAS6340-

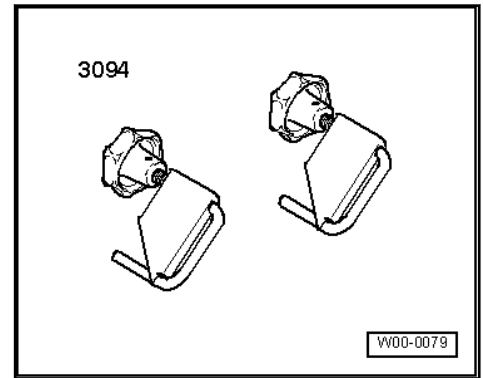


◆ Brake Bleeding Tool Set -VAS6564-






◆ Hose Clamps - Up To 25 mm -3094-





8 Revision History

DRUCK NUMBER: K0059071121

Fac- tory Edi- tion	Edit Edi- tion	Job Type	Fee dba ck	Notes	Quality Checke d By
05.2 016	04/1 3020 23	Lo- cal Up- date		Changed to Replace on both sides of the axle for pads/rotors	Joe Y.
05.2 016	06/2 8/20 16	Fac- tory Up- date	N/A		Joe Y.
10.2 014	06/2 5/20 15	Cor- rec- tion	N/A	Fixed broken Links	Eric P.
10.2 014	06/1 6/15	Re- for- mat	N/A		Eric P.
10.2 014	01/0 5/20 15	Fac- tory Up- date	N/A		Joe Y.
07.2 014	8/25/ 2014	Fac- tory Up- date	N/A		Jim H.
06.2 013	2/21/ 2014	Lo- cal Feed back			Tom P.
	02/2 1/20 14	Feed back	988 915 (Ca- na- di- an)	Change authorized by fac- tory.	Travis C.

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Volkswagen Factory Approved Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the Volkswagen Factory Approved Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

